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CHANGES IN THE SOCIAL STRATIFICATION OF CONTEMPORARY GERMANY*

HOWARD BECKER
University of Wisconsin

SOCIAL stratification and its related concepts, such as social mobility, present a densely interwoven mass of major and minor distinctions, particularly when application to the analysis of a specific society at a given time is concerned. The untangling of these distinctions could be in the highest degree useful, for advances in general sociological theory depend on just such painstaking work, but the purpose of the present paper does not permit sustained attention to this task.¹ Consequently, only rough working distinctions will be made, and virtually all of these will be made implicitly rather than explicitly. Rule-of-thumb procedure of this kind is a defect, not a virtue; only the controlling purpose of the pres-

entation provides even partial justification.

The purpose is preliminary description and fragmentary analysis of a set of phenomena that in its complexity, speed of change, and sheer dimensions confronts us with a range of scientific problems of literally unprecedented scope. The shifts in social stratification, intended and unintended, utterly dwarf, considering the time interval during which they have occurred and are occurring, anything previously known in human history. To use the rubber-stamp phrase, "merely scratch the surface," in relation to the present paper is not only to be trite but also to be oppressively obvious, as is also the statement that more detailed presentation in subsequent papers is called for.

In referring later to "the greatest purge of a body politic," "the greatest postwar mass transfer of population," and "the greatest destruction" in human history, three factors affecting social stratification in today's Germany at almost every point are singled out. Before proceeding with discussion of social stratification as such, therefore, it behooves us to look at the gross dimensions of these factors.

I

Had the elaborate de-Nazification purge undertaken in the American zone of occupa-

* Paper read at the annual meeting of the American Sociological Society held in New York, December 28-30, 1949. Most of the official data are from 1949; nothing, however, is later than September 15, 1949. Unofficial data are more recent—some from December 1, 1949, and in one case (see end of footnote 6), May 1, 1950.

¹ The literature dealing with stratification is voluminous; no attempt at even a reasonably full bibliography will here be made. The names of a few of the more prominent analysts (19th and 20th centuries), however, may be listed: Lorenz von Stein, Marx, Michels, Mosca, Pareto, Small, Ward, Landtmann, von Wiese, North, Warner, Benoit-Smullyan, Davis, Cox, Mannheim, Halbwachs, Sorokin, Max Weber, and DeMan.

tion prevailed in all the zones, about 48,000,000 empire and ethnic Germans (*Reichs- und Volksdeutsche*)² would have been registered as preliminary to the application of de-Nazification law. Inasmuch as the occupying powers of the other zones did not set up so grandiose a plan, as we shall later note in more detail, let us restrict ourselves to the American figures at this point. Close to a million persons underwent a trial or semblance thereof in the American zone within less than four years.³ Had the other zones operated on a comparable basis, nearly three-and-a-half million persons would have been tried there, making a total of four-and-a-half million in all zones, but they did not so operate, and hence a net figure of about two million trials is probably a safe estimate.

Given the range of zonal variation in

² *Reichsdeutsche*, or "empire Germans," includes all those whose citizenship was German before the Austrian *Anschluss* and the absorption of the Sudeten fringe of Czechoslovakia; *Volksdeutsche*, or "ethnic Germans," includes all those not German citizens in the above sense, but classified by Germans themselves as linguistically, "culturally," "racially," and otherwise German. Sudetens, Transylvanian Saxons, many of the Baltic minorities, and numerous other groups are here denoted.

³ It will be recalled that only for a very short period in 1945-46 did the U.S. occupation forces directly conduct any trials themselves. Under the Law for Liberation from National Socialism and Militarism, passed in more or less similar form in all provinces, German public tribunals (*Spruchkammern*) were set up. In these tribunals Germans only functioned, but verdicts judged unsuitable could be quashed by us on the ground of "delinquency and/or error." Sometimes tribunal verdicts were quashed repeatedly until one deemed sufficiently severe was arrived at, or, as was more often the case, until the wearied Military Government official acquiesced in the initial milder decision. This initial decision, of course, may have been either right or wrong.

The essential point is that Germans themselves conducted the actual trials under a law we had induced them to pass, and that we reserved the right to quash any verdict and thus compel a new trial. The Nürnberg trials, dealing only with "major war criminals" (Class I), and not with all of them, were in a different category.

See "Denazification Summary," *Information Bulletin: Magazine of U. S. Military Government in Germany* (Berlin, Germany: U. S. Army), issue 169 (Sept. 6, 1949).

trial procedure, a figure for the number of man-hours consumed can be only the roughest sort of guess based on gross figures which space forbids our presenting here. We do arrive, however, at an estimate of 305,000,000 man-hours—the entire working time of more than 30,000 persons for four full years was *directly* consumed in "the greatest purge of a body politic in human history."

What may have been indirectly expended staggers the imagination, but let us double the above estimate to take account of this, yielding a total figure of 60,000 persons at full time for four years. The result is a grand total of 610,000,000 man-hours. In any event, the writer holds the opinion that the foregoing résumé represents a *drastic understatement*. The mountain certainly labored; we shall later have occasion to refer to what was actually brought forth.

Turning now to the gross dimensions of "the greatest postwar mass transfer of population in human history,"⁴ it must first be understood that "transfer" is a misnomer if by that is meant a planned transfer carried out by controlling authorities in an orderly manner. The Potsdam agreement envisaged the transfer of "only" 6,000,000 into the confines of the four zones. Again details cannot be given here, but it can confidently be said that rump Germany now harbors nearly twelve million expellees and refugees. There would have been at least 14,000,000 had not some two to three million deaths *en route* plus "unaccountable" disappearances (probably into slave labor camps) diminished the number.⁵

The flow of these migrants is steadily from East to West. At the very lowest estimate,

⁴ This is a mouth-filling phrase, but see my earlier article, "Forms of Population Movement," *Social Forces*, 11 (Dec. and March, 1931), 147-160 and 351-361, for a reasonably wide survey of the data. See also Alexander and Eugen Kulischer, *Weltgeschichte als Völkerbewegung* (Berlin: De Gruyter, 1932).

⁵ It will be noted that in all of the foregoing the migrations of "displaced persons"—DPs—brought into Germany by force or by living conditions and wage inducement have been ignored. This is not because of lack of sympathy with the plight of the

about a quarter of a million yearly, at present rates, now enter the Western zones as refugees or expellees from the Russian zone and from other regions. The flow cannot continue, of course, for the supply would eventually be exhausted under any circumstances, but in the writer's estimation at least nine million Germans not native to the Western zones will be lodged there by 1952—only a million more need be added to those present in September, 1949.⁶

There was one decade in the history of the

DPs, but simply because they are no longer of any quantitative significance. By September, 1946, the bulk of the DPs had been repatriated from the Western zones—some 6,000,000. Only 600,000 remained. Since then their number has diminished to less than 375,000, and of these the greater number have apparently decided to stay in Germany even though no longer supported in camps by the International Refugee Organization. Less than 175,000 are now recipients of IRO support, and this number dwindles daily. Official statistics give no very clear picture of ethnic and/or confessional membership, but to choose one outstanding example, it seems safe to say that "Jewish" DPs in IRO camps in Germany now total no more than 50,000.

It should also be noted that IRO assumes no responsibility for empire or ethnic Germans, i.e., for expellees and refugees as distinct from DPs. International Refugee Organization is therefore a misnomer from the standpoint of the present paper. Further, none of the occupying powers assumes any responsibility; all expellee and refugee problems are exclusively the concern of the Germans themselves.

⁶The basic data for the above summary statements, and of others to be made later, are drawn from many sources. Most helpful have been: Philip Raup, *Land Reform in Post-War Germany: the Soviet Zone Experiment*, unpublished Ph.D. dissertation, University of Wisconsin, August, 1949—this draws extensively on German publications, Soviet sources, and official and unofficial British, American, and French reports; Josef Arndt, *Hessen und das Flüchtlingsproblem* (Wiesbaden: 1949); *Statistische Berichte, herausgegeben vom Statistischen Amt des Vereinigten Wirtschaftsgebietes*, Arb. No. VIII/0/1 and 2, Feb. 24 and Sept. 5, 1949, II/5/1, Oct. 31, 1949, and other issues; *Die Flüchtlinge in Bayern: Ergebnisse einer Sonderauszählung aus der Volks- und Berufszählung vom 29. Okt. 1946, Heft 142 der Beiträge zur Statistik Bayerns*; and a series of special tables, charts, and similar evidence compiled for my use by German and other officials whose names cannot be given here but who have cited available published sources of which a sample has been checked and found accurate.

Information received since this article was written indicates that a figure close to 8,750,000 as the

U.S. when the number of arriving immigrants was over eight million in a total population of about 92,000,000—a proportion of somewhat more than one in eleven. In the Western zones of Germany, within less than five years, the influx of newcomers has been about one in six—twice as great a proportion in half the time.

All in all, the statement that we have witnessed and are still witnessing "the greatest postwar mass transfer of population in human history" is partially borne out by the figures presented—greater detail must be reserved for other papers.

With regard to the third factor, "the greatest destruction"—of moral values, life, personality, social relations, material goods, and media of exchange—there is no need to belabor the obvious. Evidence is all too abundant and conclusive. Restricting our attention here to proportional destruction within Germany itself, and still further restricting ourselves to certain kinds of destruction visited upon Germany primarily by her opponents, with the exception of debased currency, we come first of all to the alteration in the sex ratio. At this point let us merely register as highly significant the fact that in the age group 25-45 there are 100 women for every 61 men.

Material destruction, during the war chiefly by bombing, and after the war by blowing up, tearing down, and dismantling for shipment to Russia, Poland, France, Britain, and so on, reached amazingly large dimensions. In summary, it can be said that as much as two-thirds of the 1942 industrial productivity of one of the world's great industrial nations was destroyed, and that, measured in terms of the 1942 level, the overall average recovery toward the 1936 level, generously estimated, still leaves Germany operating at somewhere near one-half her demonstrated maximum of industrial capacity.⁷ This, it should go without saying, is a simple statement of apparent fact, not of desirability or undesirability.

present (May 1, 1950) refugee-expellee population of the Western zones is likely to be quite correct.

⁷*Wirtschaft und Statistik* (Berlin: various issues from 1936 onward).

In agricultural production, the Western zones have suffered little loss of potential. In the Eastern zone, there has been a catastrophic falling-off of all types of agricultural production. The Western zones now are back to almost two-thirds of their former agricultural productivity, everything considered, but the Eastern zone is not beyond one-half, by the most liberal estimate.⁸

It is perhaps in the field of housing that the great proportional destruction of material goods in Germany is most plainly apparent. Condensing the figures into an example, it can be said that an average five-room house that has thus far not been blown over by Germany's moderate winds, and its two-room cellar, gives fourteen persons some kind of shelter. In the villages, of course, average densities are less, even though most of the refugees are quartered there, but in the extensively devastated cities it is far greater.⁹

Along with the havoc wreaked by the weapons of Germany's opponents went self-inflicted wounds. Even though it may be granted that fanatically enthusiastic Nazis never made up more than a small fraction of the German populace, it is nevertheless true that passive acquiescence to the Nazi program, aided and abetted by fervent nationalism, was characteristic of at least two-thirds. Hence the term "self-inflicted" is eminently warranted.

Overlooking the destruction of German moral values for which Nazis and nationalists were themselves responsible, and also overlooking the damage done to the previously stable networks of social relations in family, local community political and economic life, etc., which was primarily responsible for the crumbling of those values, let us concentrate on the debasement of the currency.

In order to finance the preparations for

and the prosecution of the war, officials in charge of German finance started an inflation that rapidly passed from creeping to sprinting. After Germany was conquered by her "outside" opponents, therefore, the full effects of the harm done "inside" rapidly became apparent. Within less than a year the mark had become almost worthless except in transactions directly watched by the German police and the occupying powers, and very few transactions could be so watched. "Compensation business" (a polite term for illegal barter when engaged in by business men), ordinary barter, and the famous cigarette currency appeared with seemingly miraculous speed, and by late May, 1948, a single package containing twenty American cigarettes would pay a full month's wage of a skilled worker.

The new currency (the *Deutsche Mark* which replaced the *Rentenmark*) was introduced suddenly, although its advent had long been anticipated. Essentially, all accumulations above 5,000 of the old marks were wiped out, and the remaining 5,000 had to be turned in for new marks at a 10 to 1 ratio. No one—no one!—legally could be in possession of more than 500 of the new. The industrialist, the landed proprietor, and similar owners of tangible goods, as well as the person with a governmentally enforceable claim on the proceeds of current taxation—i.e., the omnipresent bureaucrat—of course fared amazingly well in comparison with the rest of the population.

Production rapidly increased in many fields, and the level of living has now risen to a point where not more than one-fifth of the inhabitants of the Western zones suffer serious malnutrition, and many of these are in the well-populated ranks of the unemployed, a markedly disproportionate number of whom are refugees.

There is much in the Western currency reform that can justly be criticized, but what German critics oftentimes forget is the inflationary background from which the reform had to start, and that this inflation was self-inflicted.

Much more might be said about destruc-

⁸ Raup, *op. cit.*, pp. 320-337, *et passim*, my interpretations.

⁹ These statements are made on the basis of U.S. "classified documents" which can be used only as "background material" and cannot be identifiably cited or quoted. The present writer must therefore take full responsibility for all such statements.

¹⁰ This concerned, le

tion, "outside" and "inside," non-material and material, as an all-pervasive factor in changes in social stratification, but for present purposes, enough. The same is true of the other factors we have considered; it is high time that we turn to social stratification itself.

II

Let us begin with the disappearance of the "Junkers," in the Eastern zone at least, as both a class and a status group.¹⁰ During and after the war, there were repeated statements by leaders of public opinion among Germany's opponents that all large landed estates should be broken up into smaller units as a means of getting rid of the "Junkers." The members of this loosely defined group were prominent in German life as *Gutsherrn* (actual operators of large estates using "hired hands"), army officers, high-level civil officials, clergymen, and so on. Although many of them were younger sons, or in other ways had lost effective contact with their ancestral acres, it was believed that a sweeping land reform would be the best way to cut their power at the root. It should be noted, however, that nowhere in the Yalta or Potsdam agreements is there any explicit mention of the land reform policy that was to have such far-reaching consequences. The paragraphs most closely relevant are in the Potsdam agreement, and a great deal must be read into them to extract sanction for the complete confiscation of estates of 100 hectares (247 acres) and over. It was read in, first by the Russians and then by the Western occupiers.

The Russians and their German Communist associates, however, moved fast. By December, 1945, all estates of 100 hectares and over had not merely been confiscated entire, with all equipment whatsoever, and absolutely without compensation, but for good measure many of the Junker proprietors, together with their families and close adherents, had been murdered. Precise figures will in all likelihood be forever unobtainable, but it can probably be said

¹⁰This entire section, where the data are concerned, leans heavily on Raup, *op. cit.*

that Eastern land reform cost as many as 6,000 lives—men, women, and children—in the two or three months when the massacre was at its height. Extermination then proceeded at a slower rate, and there were many escapes. To date, 7,000 killings all told is perhaps enough to attribute to the expropriation phase of land reform in the Soviet zone.¹¹ It was primarily a *Jacquerie*, somewhat stimulated by propaganda, but not a closely coordinated and skilfully directed butchery—poles removed, for example, from the Nazi extermination camps. To say this, of course, is not to condone the murders.

Not all the agricultural land in the Soviet zone was in the Junker estates—definitely not. At the same time, it is still true that over 30% of the total area of the zone, representing 25% of the agriculturally used area, was in units of over 100 hectares held by "natural persons, entailed estates, or family foundations," and that the actual owners thereof made up only 1%, at most, of the total number of land owners. By contrast, the Western zones had only 11% and 8%, respectively, similarly held in plus-100 units; ownership, however, represented but 2/10 of 1% of all land ownership.

Another significant point of contrast between West and East was the relative absence, in the East, of an intermediate class of land owners. Splinter farms on the one hand, big estates worked by hired hands on the other, and not a great deal in between. In the West, on the other hand, middle-sized farms were and are quite numerous; ownership, although still considerably concentrated in some regions, is spread much more evenly throughout the range.¹²

The Russian zone had a plus-100 "surplus" of Junker land amounting to about 2,500,000 hectares. Over two-thirds of it has been redistributed to small holders.¹³

¹¹Writer's *minimum* estimate on the basis of German newspaper accounts (many of them exaggerated), interviews with survivors, intelligence reports, etc.

¹²Raup, *op. cit.*, pp. 23-78 *et passim*.

¹³"Agrarian Reform-Land Settlement as at 1 July 1949," BIPFAF/IV/5, British mimeographed document. See also Raup, *op. cit.*, pp. 247-319.

The number of small farm units (5-20 hectares) has risen from 189,000 in 1939 to over 375,000 in 1948, an increase of more than ninety per cent. The class of small holders has greatly increased, middle-sized holders (20-100) diminished, and large holders (above 100) entirely disappeared. Account should also be taken of the fact that the amount of land under State or other forms of public control has been augmented by almost half a million hectares, so that over one-third of the amount in the "land fund" is now entirely out of private hands.¹⁴

Not that ordinary Western ideas of "private property" have guided any phase of the Russian zone land reform! The new settlers are bound to the land; they cannot sell it, or even exchange it for other land without permission of State administrators. They can pass it on to their heirs, as long as it is transmitted intact and unencumbered; otherwise, it is to be assigned to new settler applicants. In effect, then, the situation in which peasants find themselves in the Soviet zone differs little, except for blood-and-soil exaltation, from that in which they found themselves under the Nazis. A larger contingent of semi-serfs has been called into existence, old masters liquidated, and new masters placed in power.

Moreover, there is every indication that the new masters intend to use their power in ways such that "private" land ownership, even of the limited kind just mentioned, has little meaning. Through sharply enforced planting and stock-breeding controls, constant economic and political supervision by "Mutual Aid Committees," progressive elimination of middle-sized landholders (*kulaks*!), increasing control of agricultural implements by central "Machine Lending Stations," and discrimination in the distribution of seed and fertilizer, the peasant is being collectivized—and not so slowly. (The same tendencies are apparent in Poland.) If the pressure continues, as there is every reason to believe it will, the Russian *kolkhoz* or collective farm will take

the place of the old Junker estates. The new masters, this time Communist instead of East-Elbian conservative, will benevolently watch over little legions of collectivized "smallholders" fighting the battle of the pig quota, the rye quota, the potato quota, the x to the n th quota.¹⁵

With prospects of this sort before him, the more farseeing new settler doubtless wonders, on occasion, whether the soil is worth the sweat. Indeed, there are reports, difficult to evaluate because of their inevitably large proportion of bias, that as many as 5% of the new settlers have already abandoned their allotments, and that considerable numbers have fled to the West.¹⁶ It is certain that an as yet small proportion of the peasants having middlesized holdings (20-100 hectares), occasionally referred to in the Communist-controlled German press as *kulaks*, have given up the unequal struggle and, frequently in fear for their lives, have slipped across "the green frontier" leaving behind all that they cannot carry on their backs. *Kulak* departures of course add to the store of redistributable land, and are probably welcomed by all but the least radical of the Communist authorities, but departures of new settlers classify virtually as desertion in the face of the enemy, and are visited with severe penalties if the attempt does not succeed.

To speak scientifically and hence somewhat anti-climactically, what the detached observer sees in the Soviet zone is de-stratification, new stratification, re-stratification.

And what has happened in the Western zones? Very little. Well, almost nothing. Nothing, certainly, in the British zone.¹⁷ Had the ruthless Russian model been followed, we (British included) would have had almost a million hectares to redistribute—not as many as the two-and-a-half million available in the Soviet zone, but still a respectable amount. In the East, two-thirds of the land seized (one-third was State appro-

¹⁴ Raup, *op. cit.*, pp. 390-422.

¹⁵ Numerous German newspaper accounts.

¹⁷ See Footnote 13.

¹⁶ Raup, *loc. cit.*

priation) was redistributed to smallholders. We seized nothing, and the German authorities to whom we yielded control redistributed about a two-hundredth of the plus-100 largeholdings available.

The writer certainly does not advocate Russian or German Communist ruthlessness, but when he worked out the above ratios he was, so to speak, mildly astonished. Astonishment becomes greater when the resettlement plans of the Western German authorities are inspected. Even when holdings too small to be tilled on other than a part-time basis are included, less than 90,000 new settlement units are contemplated. That is the maximum; if we reckon only with full-time units, fewer than 23,000 are planned. These will apparently run to about 13 hectares each—about twice as large as in the Soviet zone.¹⁸

Plans are one thing; carrying them out is something else. Thus far, in nearly five years of Western "resettlement," about 350 new peasant farm-family units have been set up through use of the plus-100 private holdings, and even when former airfields, drill-grounds, and other property of the German armed forces are included, the total runs to no more than 1,050. In short, the Western German authorities have resettled a little more than one-half of one per cent as many farm-family units as have been resettled in the Soviet zone.¹⁹ Of those resettled in the West, more than 60% were "natives" and less than 40% refugees. At the present rate and area allotment of resettlement, the Western German authorities will have exhausted all of the plus-100 private holdings within slightly more than five centuries. While this is coming to pass, no large landowner has much to worry about within his lifetime.

In sum, the class and status hierarchy based on land ownership has been radically altered in the Soviet zone, at the cost of a catastrophic decline in agricultural production, many lives, unimaginable misery, and

a contingent of refugees who have abandoned their farms. In the West, the hierarchy mentioned has been altered little if at all.²⁰

III

Still focusing chiefly on the primarily economic aspects of social stratification, we now turn to business and industry.²¹

In the U.S. zone at least, the great cartels have been thoroughly broken up, and considerable progress has been made in the British zone. Little on which one can rely is known about the Soviet zone, but it may be assumed that the cartel structure has been changed in ways such that it fits into a nationalization pattern—German and/or Russian. Except for the Saar mines and industries, and Ludwigshafen and a few other great plants, the French have relatively little that is significant from the cartel standpoint, but insignificant or not, to what extent ties with the *Comité des Forges* and similar France-Belgium-Luxembourg cartels have been severed is not clearly evident.

Anyway, much too much emphasis has been laid on the cartels as such. There are many methods, formal and informal, of holding together large industrial and business aggregates, many ways of "regulating" prices, many systems of maintaining monopoly control. De-cartelization has been honestly carried through in the American zone,²² for example, but that is not to say that the grip of the great financial and industrial magnates, German and non-Ger-

¹⁸ It should be noted that U. S. High Commissioner McCloy recently warned Chancellor Adenauer that more should be done for the expellees and refugees by the "natives" of the Western zones. It is the opinion of the writer that, given the nature of the Yalta and Potsdam agreements, we ourselves might have foreseen the enormous influx, but in any case the problem, in its total dimensions, cannot be solved by the Germans alone. They can, however, take immediate steps to alter the land-owning hierarchy, and thereby resettle much more of the migrant surplus than they are now doing.

²¹ The remarks made in footnote 9 apply to this section as well. For other information, the writer has found useful the article by A. R. L. Gurland, "Why Democracy Is Losing in Germany," *Commentary*, 8 (Sept., 1949), 227-237.

²² Gurland, *op. cit.*, p. 233.

¹⁹ *Ibid.*

²⁰ It must be noted, however, that the holdings allotted in the Soviet zone are only one-half as large as those in the West.

man, has been loosened to any remarkable degree. The present German chancellor, Adenauer, has long represented the extreme right wing of his party—once the Center, now the Christian Democratic Union (plus the Bavarian CSU). His sympathies have long been primarily with the Ruhr and north Rhineland industrialists, mining magnates, and financiers; even the extremely conservative Catholic trade unions have never had his confidence. Business and industry still sit, albeit somewhat uneasily, in the saddles of German "free enterprise."

It might be thought that de-Nazification would have prevented this in view of the notorious identification of many leading magnates with the Nazi war machine. Anyone cherishing such a notion is ignorant of the ineffectiveness of "the greatest purge of a body politic in human history." The 610,000,000 man-hours expended in the de-Nazification purge did little to inconvenience seriously any but the most obvious and flagrant offenders among *Western German businessmen and industrialists*; the merited and adequate penalties, as well as the real hardships and crying injustices, occurred chiefly at other economic-social levels.²³

To sum up: a few great figureheads of Krupp type are missing today, but well over four-fifths of the upper layers of the eco-

nomic hierarchy in the Western zones have remained, in relation to other layers, where they were before defeat, and their level in the status hierarchy has not been notably impaired—in fact, it has probably moved slightly upward. Some persons in this class-status group were genuinely anti-Nazi, but few indeed are anti-militarist, much less anti-nationalist. *Selah.*

IV

Viewing the structure of German society from the political angle, there quickly appear many interesting intersections with economic, religious, sex-ratio, and similar perspectives. Our line of sight will therefore be modified by our prior knowledge of these intersections—and why not?

Every newspaper reader has some idea of the contrast between political affairs in East and in West Germany; a considerable amount of reasonably accurate background knowledge can be assumed. We all know, for example, that the present Bonn regime is unsteadily based on a coalition of the Christian Democratic Union, plus its Bavarian CSU affiliate, with the Free Democratic Party, and that this coalition has taken the place of the Social Democratic-Christian Democratic coalition that had previously held control in most of the provinces (*Länder*) of the Western zones. In addition, we all know that the Communists have lost ground in the Western zones ever since the successful operation of the Berlin Air Lift and the currency reform, so that today, although still, constituting a legal party, they are by far the weakest of all major political groups in the West. Once more, we all know that the Western Social Democrats, under Schumacher's leadership, have recently given voice to what have been regarded as strongly nationalist sentiments, and we have been astonished by this apparent reversal of the anti-nationalism so often attributed to the Social Democrats.

What we can read only between the lines, in most cases, is that the present Bonn regime is *very* unstable, representing, as it does, a mixture of vague antagonism to other than strongly conservative union labor,

²³ There were many unwarranted hardships and flagrant injustices—that must be granted. For example, petty bureaucrats, utterly at the mercy of their bandwagon Nazi superiors, were forced into various "Party affiliates" or even into the Party itself. Surely, they could refuse—with the alternatives of unemployment, concentration camp, or active military service on the Russian front, *plus* "appropriate measures" against their relatives. Few did refuse—the lust for martyrdom is not widespread. The result was that there were incriminating entries on the de-Nazification questionnaires filled out by such persons; hence they could find employment, if at all, only at ordinary labor. Not being industrial tycoons, the ordinary labor they found might mean a shift from bookkeeping to ditch-digging. In most cases, of course, they went on the relief rolls. The cumbersome, spuriously precise questionnaires used in registration and trial proceedings had much to do with these shortcomings of de-Nazification. The worthlessness of the procedure was clearly foreseen by many, as witness the remarkable anonymous article, "Denazification," *Social Research*, 14 (March, 1947), 59-74, Foreword by Alvin Johnson.

moral-religious anxiety at the crumbled state of German values, States' rights programs bearing the name of Federalism, desire on the part of higher officials to avoid open clashes with the occupying powers, defense of small private property somewhat incongruously coupled with defense of "good" monopolies, preservation of social security benefits, revival of "humanistic" education, and other *disiecta membra*. As the candidate of this assortment, Adenauer secured his office, as we know, by a 201 to 200 vote. The much less motley and more determined Free Democrats, uniting a vigorous program of untrammelled free enterprise with strong nationalism, and with a very large contingent of more or less purified Nazis, can sway the Bonn regime this way or that in spite of their smaller number.

The Social Democrats, however, represent a constant threat, for they still retain their former proportional strength; their present absence from power is primarily the result of increase in the proportional strength of their opponents as a result of the flocking of former "splinter party" membership to the banners of the Christian and Free Democrats. The Social Democrats might even have increased their proportional strength had it not been for the women's vote. Given the sex imbalance previously noted, and given the strong moral-religious appeal of pastoral letters and other clerical pressure, predominantly Catholic but with outspoken Protestant backing, the skewing of the women's vote was sufficient to keep the Social Democrats where they proportionally were, and that was not enough for victory.

What also has to be gleaned from between the lines is that the Western occupying powers, with the United States in the lead, actively back the Christian Democrats. (The British sometimes hesitantly lean a bit in the Social-Democratic direction, but the Labour Party apparently is not an article of export.) Had the delegates from the Western sectors of Berlin been given seats in the Bonn convention, the Social Democrats would now be in power, for the Berliners were almost solidly Social-Democratic.

The upshot, in rough outline, is that the

political power structure is today buttressed by clerical, free enterprise, nationalistic, middle- and upper-class, peasant, and particularistic props, with the approval and aid of the occupation powers as additional supports.²⁴

Where does the bureaucracy stand in all of this? In a very peculiar position. As is generally known, appointive civil service status, with which we may equate bureaucratic status, is assigned to a very wide range of occupations in Germany. All teachers, university professors, educational administrators, researchers in university laboratories and bureaus, judges, taxation officials, transportation and communications employees, housing, employment, and rationing functionaries, and so on throughout a range of occupations difficult for an American to imagine even in our own rapidly bureaucratizing condition, are in this sense bureaucrats. The occupation powers, by their policies, notably increased the number of these civil servants and gave them a far more solidly entrenched position, in terms of immunity from interference by elected representatives of the people, than they had ever enjoyed before, but also forbade them to engage in any political participation other than joining parties and voting. They cannot serve on party committees or publicly speak in political campaigns, much less run for office.

The Christian Democrats are somewhat hampered by this, but they have a sufficient number of members from non-bureaucratic callings to get along quite well. The Free Democrats are much less handicapped, for they include many physicians, financiers, independent shopkeepers, industrialists, and large landowners. The Social Democrats are terrifically disadvantaged. Why?

The answer lies in German class-status structure as reflected in educational levels and career possibilities. In general, it can be said that German left-wing parties have attracted few "intellectuals" from the middle and upper class-status groups, in marked

²⁴ Gurland, *op. cit.*, p. 235, and the writer's firsthand observation over almost a two-year period.

contrast to the British and French. The brilliant son of a German worker very rarely succeeded in entering the educational channels leading to a career in law, medicine, university instruction and research, and the like. Even if he found an opportunity, it often happened that paternal distrust of a career choice smacking of class disloyalty held him back. He could, however, work his way into the subordinate ranks of the civil service, and might eventually become a fairly high-level bureaucrat, while at the same time actively working for his lower-class party. Until the occupation powers proscribed this, the greater number of Social-Democratic "intellectual" leaders was hence drawn from among persons who were simultaneously bureaucrats and party politicians. There was no other way to recruit "intellectuals."²³ (Even those thus recruited often had a difficult time with their more directly "proletarian" co-workers; there has long existed in Social-Democratic ranks deep suspicion of any but the calloused hand.)²⁴

²³ Gurland, *op. cit.*, pp. 229-230.

²⁴ Ludwig Gatter, "Ein neuer Typ des Arrivier-

Our policies have therefore helped to widen, if anything, the existing gaps between classes, and have markedly handicapped working-class political expression. The anti-occupation "nationalism" of the Social Democrats in the Western zones stems in part from this situation. Only the Berlin Social Democrats locked in a life-and-death struggle with the Communists, and mindful of the possibility that the "miracle of the airlift" may need to be repeated, have thus far refrained from utterances of an anti-Western-occupational cast. Their experience with the Bonn exclusion was a sore trial to their patience and fortitude; until now, however, they have said little in blame of the Western occupiers. After all, their Christian and Free Democratic fellow-Germans were eager to exclude them.

Stratification moves in a mysterious way its wonders to perform.

ten: das Opfer des Faschismus," *Festschrift für Hanna Meuter zum 60. Geburtstage, Archiv für Publizistik* (Aachen: Auslieferung durch Archiv für Publizistik, 1949), p. 40.

CONFLICTS BETWEEN STAFF AND LINE MANAGERIAL OFFICERS

MELVILLE DALTON

Industrial management

IN ITS concentration on union-management relations, industrial sociology has tended to neglect the study of processes inside the ranks of industrial management. Obviously the doors to this research area are more closely guarded than the entry to industrial processes through the avenue of production workers, but an industrial sociology worthy of the name must sooner or later extend its inquiries to include the activities of all industrial personnel.

The present paper is the result of an attempt to study processes among industrial managers. It is specifically a report on the functioning interaction between the two major vertical groupings of industrial man-

agement: (1) the *staff* organization, the functions of which are research and advisory; and (2) the *line* organization, which has exclusive authority over production processes.

Industrial staff organizations are relatively new. Their appearance is a response to many complex interrelated forces, such as economic competition, scientific advance, industrial expansion, growth of the labor movement, and so on. During the last four or five decades these rapid changes and resulting unstable conditions have caused top industrial officials more and more to call in "specialists" to aid them toward the goal of greater production and efficiency. These

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specialists are of many kinds including chemists, statisticians, public and industrial relations officers, personnel officers, accountants, and a great variety of engineers, such as mechanical, draughting, electrical, chemical, fuel, lubricating, and industrial engineers. In industry these individuals are usually known as "staff people." Their functions, again, for the most part are to increase and apply their specialized knowledge in problem areas, and to advise those officers who make up the "line" organization and have authority¹ over production processes.

This theoretically satisfying industrial structure of specialized experts advising busy administrators has in a number of significant cases failed to function as expected. The assumptions that (a) the staff specialists would be reasonably content to function without a measure of formal authority² over production, and that (b) their suggestions regarding improvement of processes and techniques for control over personnel and production would be welcomed by line officers and be applied, require closer examination. In practice there is often much conflict between industrial staff and line organizations and in varying degrees the members of these organizations oppose each other.³

¹ Inside their particular staff organization, staff officers also may have authority over their subordinates, but not over production personnel.

² To the extent that staff officers influence line policy they do, of course, have a certain informal authority.

³ Some social scientists have noted the possibility of staff-line friction, and industrial executives themselves have expressed strong feelings on the matter. See Burleigh B. Gardner, *Human Relations in Industry* (Chicago: Richard D. Irwin, Inc., 1945) and H. E. Dimock, *The Executive in Action* (New York: Harper & Brothers, 1945). Dimock believes that we are too "staff-minded" and that we should become more "executive-minded" (p. 241). A high line officer in a large corporation denounced staff organizations to the writer on the ground of their "costing more than they're worth," and that "They stir up too much trouble and are too theoretical." He felt that their function (excepting that of accountants, chemists, and "a few mechanical engineers") could be better carried out by replacing them with "highly-select front-line foremen [the

The aim of this paper is, therefore, to present and analyze data dealing with staff-line tensions.

Data were drawn from three industrial plants⁴ in which the writer had been either a participating member of one or both of the groups or was intimate with reliable informants among the officers who were.

Approached sociologically, relations among members of management in the plants could be viewed as a general conflict system caused and perpetuated chiefly by (1) power struggles in the organization stemming in the main from competition among departments to maintain low operating costs; (2) drives by numerous members to increase their status in the hierarchy; (3) conflict between union and management; and (4) the staff-line friction which is the subject of this paper.⁵ This milieu of tensions was not only unaccounted for by the blue-print organizations of the plants, but was often contradictory to, and even destructive of, the organizations' formal aims. All members of management, especially in the middle and lower ranks,⁶ were caught up

lowest placed line officers] who are really the backbone of management, and pay them ten or twelve thousand dollars a year."

⁴ These plants were in related industries and ranged in size from 4,500 to 20,000 employees, with the managerial groups numbering from 200 to nearly 1,000. Details concerning the plants and their location are confidential. Methodological details concerning an intensive study embracing staff-line relations and several other areas of behavior in one of the plants are given in the writer's unpublished doctoral thesis, "A Study of Informal Organization Among the Managers of an Industrial Plant," (Department of Sociology, University of Chicago, 1949).

⁵ Because these conflict areas were interrelated and continually shifting and reorganizing, discussion of any one of them separately—as in the case of staff-line relations—will, of course, be unrealistic to some extent.

⁶ From bottom to top, the line hierarchy consisted of the following strata of officers: (1) first-line foremen, who were directly in charge of production workmen; (2) general foremen; (3) departmental superintendents; (4) divisional superintendents; (5) assistant plant manager; (6) plant manager. In the preceding strata there were often "assistants," such as "assistant general foreman," "assistant superintendent," etc., in which case the

in this conflict system. Even though they might wish to escape, the obligation of at least appearing to carry out formal functions compelled individuals to take sides in order to protect themselves against the aggressions of others. And the intensity of the conflict was aggravated by the fact that it was formally unacceptable and had to be hidden.

For analytical convenience, staff-line friction may be examined apart from the reciprocal effects of the general conflict system. Regarded in this way, the data indicated that three conditions were basic to staff-line struggles: (1) the conspicuous ambition and "individualistic" behavior among staff officers; (2) the complication arising from staff efforts to justify its existence and get acceptance of its contributions; and, related to point two, (3) the fact that incumbency of the higher staff offices was dependent on line approval. The significance of these conditions will be discussed in order.

MOBILE BEHAVIOR OF STAFF PERSONNEL

As a group, staff personnel in the three plants were markedly ambitious, restless, and individualistic. There was much concern to win rapid promotion, to make the "right impressions," and to receive individual recognition. Data showed that the desire among staff members for personal distinctions often over-rode their sentiments of

total strata of the line hierarchy could be almost double that indicated here.

In the staff organizations the order from bottom to top was: (1) supervisor (equivalent to the first-line foreman); (2) general supervisor (equivalent to the general foreman); (3) staff head—sometimes "superintendent" (equivalent to departmental superintendent in the line organization). Occasionally there were strata of assistant supervisors and assistant staff heads.

The term "upper line" will refer to all strata above the departmental superintendent. "Middle line" will include the departmental superintendents and assistants. "Lower line" will refer to general and first-line foremen and their assistants.

"Lower," "middle," and "upper" staff will refer respectively to the supervisor, general supervisor and staff head.

"Top management" will refer to the upper line and the few staff heads with whom upper line officers were especially intimate on matters of policy.

group consciousness and caused intra-staff tensions.⁷

The relatively high turnover of staff personnel⁸ quite possibly reflected the dissatisfactions and frustrations of members over inability to achieve the distinction and status they hoped for. Several factors appeared to be of importance in this restlessness of staff personnel. Among these were age and social differences between line and staff officers, structural differences in the hierarchy of the two groups, and the staff group's lack of authority over production.

With respect to age, the staff officers were significantly younger than line officers.⁹ This would account to some extent for their rest-

⁷ In a typical case in one of the plants, a young staff officer developed a plan for increasing the life of certain equipment in the plant. He carried the plan directly to the superintendent of the department in which he hoped to introduce it, but was rebuffed by the superintendent who privately acknowledged the merit of the scheme but resented the staff officer's "trying to lord it over" him. The staff organization condemned the behavior of its member and felt that he should have allowed the plan to appear as a contribution of the staff group rather than as one of its members. The officer himself declared that "By G—it's my idea and I want credit. There's not a damn one of you guys [the staff group] that wouldn't make the same squawk if you were in my place!"

⁸ During the period between 1944 and 1950 turnover of staff personnel in these plants was between two and four times as great as that of line personnel. This grouping included all the non-managerial members of staff and line and all the hourly-paid (non-salaried) members of management (about 60 assistant first-line foremen). Turnover was determined by dividing the average number of employees for a given year (in line or staff) into the accessions or separations, whichever was the smaller.

⁹ Complete age data were available in one of the larger plants. Here the 36 staff heads, staff specialists, and assistants had a mean age of 42.9 years. This value would have been less than 40 years, except for the inclusion of several older former line officers, but even a mean of 42.9 years was significantly less (C.R. 2.8) than that of the 35 line superintendents in the plant who had a mean age of 48.7 years. The age difference was even more significant when the staff heads were compared with the 61 general foremen who had a mean age of 50.0 years. And between the 93 salaried first-line foremen (mean age of 48.5 years) and the 270 salaried nonsupervisory staff personnel (mean age of 31.0 years) the difference was still greater.

lessness. Being presumably less well-established in life in terms of material accumulations, occupational status, and security, while having greater expectations (see below), and more energy, as well as more life ahead in which to make new starts elsewhere if necessary, the staff groups were understandably more dynamic and driving.¹⁰

Age-conflict¹¹ was also significant in staff-line antagonisms. The incident just noted of the young staff officer seeking to get direct acceptance by the line of his contribution failed in part—judging from the strong sentiments later expressed by the line superintendent—because of an age antipathy. The older line officers disliked receiving what they regarded as instruction from men so much younger than themselves, and staff personnel clearly were conscious of this attitude among line officers.¹² In staff-line meetings staff officers frequently had their ideas slighted or even treated with amusement by line incumbents. Whether such treatment

was warranted or not, the effects were disillusioning to the younger, less experienced staff officers. Often selected by the organization because of their outstanding academic records, they had entered industry with the belief that they had much to contribute, and that their efforts would win early recognition and rapid advancement. Certainly they had no thought that their contributions would be in any degree unwelcome. This naiveté¹³ was apparently due to lack of earlier first-hand experience in industry (or acquaintance with those who had such experience), and to omission of realistic instruction in the social sciences from their academic training. The unsophisticated staff officer's initial contacts with the shifting, covert, expedient arrangements between members of staff and line usually gave him a severe shock. He had entered industry prepared to engage in logical, well-formulated relations with members of the managerial hierarchy, and to carry out precise, methodical functions for which his training had equipped him. Now he learned that (1) his freedom to function was snared in a web of informal commitments; (2) his academic specialty (on which he leaned for support in his new position) was often not relevant¹⁴ for carrying out his formal assignments; and that (3) the important thing to do was to

¹⁰ One might also hypothesize that the drive of staff officers was reflected in the fact that the staff heads and specialists gained their positions (those held when the data were collected) in less time than did members of the line groups. E.g., the 36 staff officers discussed above had spent a median of 10 years attaining their positions, as against a median of 11 years for the first-line foremen, 17 years for the general foremen, and 19 years for the superintendents. But one must consider that some of the staff groups were relatively new (13-15 years old) and had grown rapidly, which probably accelerated their rate of promotions as compared with that of the older line organization.

¹¹ E. A. Ross in *Principles of Sociology* (New York: D. Appleton-Century Co., 1938) pp. 238-48, has some pertinent comments on age conflict.

¹² Explaining the relatively few cases in which his staff had succeeded in "selling ideas" to the line, an assistant staff head remarked: "We're always in hot water with these old guys on the line. You can't tell them a damn thing. They're bull-headed as hell! Most of the time we offer a suggestion it's either laughed at or not considered at all. The same idea in the mouth of some old codger on the line'd get a round of applause. They treat us like kids."

Line officers in these plants often referred to staff personnel (especially members of the auditing, production planning, industrial engineering, and industrial relations staffs) as "college punks," "slide-rules," "crackpots," "pretty boys," and "chairwarmers."

¹³ John Mills, a research engineer retired from the telephone industry, has noted the worldly naiveté of research engineers in that field in his *The Engineer in Society* (New York: D. Van Nostrand Co., 1946).

¹⁴ Among the staff heads and assistants referred to earlier, only 50 per cent of those with college training (32 of the 36 officers) were occupied with duties related to their specialized training. E.g., the head of the industrial relations staff had a B.S. degree in aeronautical engineering; his assistant had a similar degree in chemical engineering. Considering that staff officers are assumed to be specialists trained to aid and advise management in a particular function, the condition presented here raises a question as to what the criteria of selection were. (As will be shown in a separate paper, the answer appeared to be that personal—as well as impersonal—criteria were used.) Among the college-trained of 190 line officers in the same plant, the gap between training and function was still greater, with 61 per cent in positions not related to the specialized part of their college work.

learn who the informally powerful line officers were and what ideas they would welcome which at the same time would be acceptable to his superiors.

Usually the staff officer's reaction to these conditions is to look elsewhere for a job or make an accommodation in the direction of protecting himself and finding a niche where he can make his existence in the plant tolerable and safe. If he chooses the latter course, he is likely to be less concerned with creative effort for his employer than with attempts to develop reliable social relations that will aid his personal advancement. The staff officer's recourse to this behavior and his use of other status-increasing devices will be discussed below in another connection.

The formal structure, or hierarchy of statuses, of the two larger plants from which data were drawn, offered a frustration to the ambitious staff officer. That is, in these plants the strata, or levels of authority, in the staff organizations ranged from three to five as against from five to ten in the line organization. Consequently there were fewer possible positions for exercise of authority into which staff personnel could move. This condition may have been an irritant to expansion among the staff groups. Unable to move vertically to the degree possible in the line organization, the ambitious staff officer could enlarge his area of authority in a given position only by lateral expansion—by increasing his personnel. Whether or not aspiring staff incumbents revolted against the relatively low hierarchy through which they could move, the fact remains that (1) they appeared eager to increase the number of personnel under their authority,¹⁵ (2) the

personnel of staff groups *did* increase disproportionately to those of the line,¹⁶ and (3) there was a trend of personnel movement from staff to line,¹⁷ rather than the reverse, presumably (reflecting the drive and ambition of staff members) because there were more positions of authority, as well as more authority to be exercised, more prestige, and usually more income in the line.

Behavior in the plants indicated that line

line officers) spent by lower staff personnel in social activities on the job, and (3) the constantly recurring (but not always provoked) claims among staff personnel of their functional importance for production. The duties of middle and lower staff personnel allowed them sufficient time to argue a great deal over their respective functions (as well as many irrelevant topics) and to challenge the relative merit of one another's contributions or "ideas." In some of the staffs these discussions could go on intermittently for hours and develop into highly theoretical jousts and wit battles. Where staff people regarded such behavior as a privilege of their status, line officers considered it as a threat to themselves. This lax control (in terms of line discipline) was in part a tacit reward from staff heads to their subordinates. The reward was expected because staff superiors (especially in the industrial relations, industrial engineering, and planning staffs) often overlooked and/or perverted the work of subordinates (which was resented) in response to pressures from the line. This behavior will be noted later.

¹⁵In one of the larger plants, where exact data were available, the total staff personnel had by 1945 exceeded that of the line. At that time the staff included 400 members as against 317 line personnel composed of managerial officers and their clerical workers, but not production workers. By 1948 the staff had increased to 517 as compared with 387 for the line (during this period total plant personnel declined over 400.). The staff had grown from 20.8 per cent larger than the line in 1945 to 33.6 per cent larger in 1948, and had itself increased by 29.3 per cent during the three years as against a growth in the line of 22.1 per cent. Assuming the conditions essential for use of probability theory, the increase in staff personnel could have resulted from chance about 1.5 times in a hundred. Possibly post-war and other factors of social change were also at work but, if so, their force was not readily assessable.

¹⁷This movement from staff to line can disorganize the formal managerial structure, especially when (1) the transferring staff personnel have had little or no supervisory experience in the staff but have an academic background which causes them to regard human beings as mechanisms that will respond as expected; (2) older, experienced line officers have hoped—for years in some cases—to occupy the newly vacated (or created) positions.

¹⁵This was suggested by unnecessary references among some staff officers to "the number of men under me," and by their somewhat fanciful excuses for increase of personnel. These excuses included statements of needing more personnel to (1) carry on research, (2) control new processes, (3) keep records and reports up-to-date. These statements often did not square with (1) the excessive concern among staff people about their "privileges" (such as arriving on the job late, leaving early, leaving the plant for long periods during working hours, having a radio in the office during the World Series, etc.); (2) the great amount of time (relative to that of

and staff personnel belonged to different social status groups and that line and staff antipathies were at least in part related to these social distinctions. For example, with respect to the item of formal education, the staff group stood on a higher level than members of the line. In the plant from which the age data were taken, the 36 staff officers had a mean of 14.6 years of schooling as compared with 13.1 years for 35 line superintendents, 11.2 years for 60 general foremen, and 10.5 years for 93 first-line foremen. The difference between the mean education of the staff group and that of the highest line group (14.6-13.1) was statistically significant at better than the one per cent level. The 270 non-supervisory staff personnel had a mean of 13.1 years—the same as that of the line superintendents. Consciousness of this difference probably contributed to a feeling of superiority among staff members, while the sentiment of line officers toward staff personnel was reflected in the name-calling noted earlier.

Staff members were also much concerned about their dress, a daily shave, and a weekly hair-cut. On the other hand line officers, especially below the level of departmental superintendent, were relatively indifferent to such matters. Usually they were in such intimate contact with production processes that dirt and grime prevented the concern with meticulous dress shown by staff members. The latter also used better English in speaking and in writing reports, and were more suave and poised in social intercourse. These factors, and the recreational preferences of staff officers for night clubs and "hot parties," assisted in raising a barrier between them and most line officers.

The social antipathies of the two groups and the status concern of staff officers were indicated by the behavior of each toward the established practice of dining together in the cafeterias reserved for management in the two larger plants. Theoretically, all managerial officers upward from the level of general foremen in the line, and general supervisors in the staff, were eligible to eat in these cafeterias. However, in practice the mere taking of one of these offices did not

automatically assure the incumbent the privilege of eating in the cafeteria. One had first to be invited to "join the association." Staff officers were very eager to "get in" and did considerable fantasizing on the impressions, with respect to dress and behavior, that were believed essential for an invitation. One such staff officer, a cost supervisor, dropped the following remarks:

There seems to be a committee that passes on you. I've had my application in for three years, but no soap. Harry [his superior] had his in for over three years before he made it. You have to have something, because if a man who's in moves up to another position the man who replaces him doesn't get it because of the position—and he might not get it at all. I think I'm about due.

Many line officers who were officially members of the association avoided the cafeteria, however, and had to be *ordered* by the assistant plant manager to attend. One of these officers made the following statement, which expressed more pointedly the many similar spontaneous utterances of resentment and dislike made by other line officers:

There's a lot of good discussion in the cafeteria. I'd like to get in on more of it but I don't like to go there—sometimes I have to go. Most of the white collar people [staff officers] that eat there are stuck-up. I've been introduced three times to Svendsen [engineer], yet when I meet him he pretends to not even know me. When he meets me on the street he always manages to be looking someplace else. G—d—such people as that! They don't go in the cafeteria to eat and relax while they talk over their problems. They go in there to look around and see how somebody is dressed or to talk over the hot party they had last night. Well, that kind of damn stuff don't go with me. I haven't any time to put on airs and make out I'm something that I'm not.

COMPLICATIONS OF STAFF NEED TO PROVE ITS WORTH

To the thinking of many line officers, the staff functioned as an agent on trial rather than as a managerial division that might be of equal importance with the line organization in achieving production goals. Staff members were very conscious of this senti-

ment toward them and of their need to prove themselves. They strained to develop new techniques and to get them accepted by the line. But in doing this they frequently became impatient, and gave already suspicious line officers the impression of reaching for authority over production.

Since the line officer regards his authority over production as something sacred, and resents the implication that after many years in the line he needs the guidance of a newcomer who lacks such experience, an obstacle to staff-line cooperation develops the moment this sore spot is touched. On the other hand, the staff officer's ideology of his function leads him to precipitate a power struggle with the line organization. By and large he considers himself as an agent of top management. He feels bound to contribute something significant in the form of research or ideas helpful to management. By virtue of his greater education and intimacy with the latest theories of production, he regards himself as a managerial consultant and an expert, and feels that he must be, or appear to be, almost infallible once he has committed himself to top management on some point. With this orientation, he is usually disposed to approach middle and lower line with an attitude of condescension that often reveals itself in the heat of discussion. Consequently, many staff officers involve themselves in trouble and report their failures as due to "ignorance" and "bull-headedness" among these line officers.

On this point, relations between staff and line in all three of the plants were further irritated by a rift inside the line organization. First-line foremen were inclined to feel that top management had brought in the production planning, industrial relations, and industrial engineering staffs as clubs with which to control the lower line. Hence they frequently regarded the projects of staff personnel as manipulative devices, and reacted by cooperating with production workers and/or general foremen (whichever course was the more expedient) in order to defeat insistent and uncompromising members of the staff. Also, on occasion (see below), the lower line could cooperate eva-

sively with lower staff personnel who were in trouble with staff superiors.

EFFECT OF LINE AUTHORITY OVER STAFF PROMOTION

The fact that entry to the higher staff offices in the three plants was dependent on approval of top line officers had a profound effect on the behavior of staff personnel. Every member of the staff knew that if he aspired to higher office he must make a record for himself, a good part of which would be a reputation among upper line officers of ability to "understand" their informal problems without being told. This knowledge worked in varying degrees to pervert the theory of staff-line relations. Ideally the two organizations cooperate to improve existing methods of output, to introduce new methods, to plan the work, and to solve problems of production and the scheduling of orders that might arise. But when the line offers resistance to the findings and recommendations of the staff, the latter is reduced to evasive practices of getting some degree of acceptance of its programs, and at the same time of convincing top management that "good relations" exist with officers down the line. This necessity becomes even more acute when the staff officer aspires (for some of the reasons given above) to move over to the line organization, for then he must convince powerful line officers that he is worthy. In building a convincing record, however, he may compromise with line demands and bring charges from his staff colleagues that he is "selling out," so that after moving into the line organization he will then have to live with enemies he made in the staff. In any case, the need among staff incumbents of pleasing line officers in order to perfect their careers called for accommodation in three major areas:¹⁸ (1) the observance of staff rules, (2) the introduction of new techniques, and (3) the use of appropriations for staff research and experiment.

¹⁸ The relative importance of one or more of these areas would vary with the function of a given staff.

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With respect to point one, staff personnel, particularly in the middle and lower levels, carried on expedient relations with the line that daily evaded formal rules. Even those officers most devoted to rules found that, in order not to arouse enmity in the line on a scale sufficient to be communicated *up* the line, compromising devices were frequently helpful and sometimes almost unavoidable both for organizational and career aims. The usual practice was to tolerate minor breaking of staff rules by line personnel, or even to cooperate with the line in evading rules,¹⁹ and in exchange lay a claim on the line for cooperation on critical issues. In some cases line aid was enlisted to conceal lower staff blunders from the upper staff and the upper line.²⁰

Concerning point two, while the staff or-

¹⁹ In a processing department in one of the plants the chemical solution in a series of vats was supposed to have a specific strength and temperature, and a fixed rate of inflow and outflow. Chemists (members of the chemical staff) twice daily checked these properties of the solution and submitted reports showing that all points met the laboratory ideal. Actually, the solution was usually nearly triple the standard strength, the temperature was about 10 degrees Centigrade higher than standard, and the rate of flow was in excess of double the standard. There are, of course, varying discrepancies between laboratory theory and plant practice, but the condition described here resulted from production pressures that forced line foremen into behavior upsetting the conditions expected by chemical theory. The chemists were sympathetic with the hard-pressed foremen, who compensated by (1) notifying the chemists (rather than their superior, the chief chemist) if anything "went wrong" for which the laboratory was responsible and thus sparing them criticism; and by (2) cooperating with the chemists to reduce the number of analyses which the chemists would ordinarily have to make.

²⁰ Failure of middle and lower staff personnel to "cooperate" with line officers might cause the latter to "stand pat" in observance of line rules at a time when the pressures of a dynamic situation would make the former eager to welcome line cooperation in rule-breaking. For example, a staff officer was confronted with the combined effect of (1) a delay in production on the line that was due to an indefensible staff error; (2) pressure on the line superintendent—with whom he was working—to hurry a special order; and (3) the presence in his force of new inexperienced staff personnel who were (a) irritating to line officers, and (b) by their inexperience constituted an invitation to line aggression. Without aid

organizations gave much time to developing new techniques, they were simultaneously thinking about how their plans would be received by the line. They knew from experience that middle and lower line officers could always give a "black eye" to staff contributions by deliberate mal-practices. Repeatedly top management had approved, and incorporated, staff proposals that had been verbally accepted down the line. Often the latter officers had privately opposed the changes, but had feared that saying so would incur the resentment of powerful superiors who could informally hurt them. Later they would seek to discredit the change by deliberate mal-practice and hope to bring a return to the former arrangement. For this reason there was a tendency for staff members to withhold improved production schemes or other plans when they knew that an attempt to introduce them might fail or even bring personal disrepute.

Line officers fear staff innovations for a number of reasons. In view of their longer experience, presumably intimate knowledge of the work, and their greater remuneration, they fear²¹ being "shown up" before their line superiors for not having thought of the processual refinements themselves. They fear that changes in methods may bring personnel changes which will threaten the break-up of cliques and existing informal arrangements and quite possibly reduce their area of authority. Finally, changes in techniques may expose forbidden practices and departmental inefficiency. In some cases these fears have stimulated line officers to compromise staff men to the point where the latter will agree to postpone the initiation of new practices for specific periods.

from the line superintendent (which could have been withheld by observance of formal rules) in covering up the staff error and in controlling line personnel, the staff officer might have put himself in permanent disfavor with all his superiors.

²¹ Though there was little evidence that top management expected line officers to refine production techniques, the fear of such an expectation existed nevertheless. As noted earlier, however, some of the top executives were thinking that development of a "higher type" of first-line foreman might enable most of the staff groups to be eliminated.

In one such case an assistant staff head agreed with a line superintendent to delay the application of a bonus plan for nearly three months so that the superintendent could live up to the expedient agreement he had made earlier with his grievance committeeman to avoid a "wildcat" strike by a group of production workmen.²² The lower engineers who had devised the plan were suspicious of the formal reasons given to them for withholding it, so the assistant staff head prevented them (by means of "busy work") from attending staff-line meetings lest they inadvertently reveal to top management that the plan was ready.

The third area of staff-line accommodations growing out of authority relations revolved around staff use of funds granted it by top management. Middle and lower line charged that staff research and experimentation was little more than "money wasted on blunders," and that various departments of the line could have "accomplished much more with less money." According to staff officers, those of their plans that failed usually did so because line personnel "sabotaged" them and refused to "cooperate." Specific costs of "crack-pot experimentation" in certain staff groups were pointed to by line officers. Whatever the truth of the charges and counter-charges, evidence indicated (confidants in both groups supported this) that pressures from the line organization (below the top level) forced some of the staff groups to "kick over" parts of the funds appropriated for staff use²³ by top management. These compromises were of course hidden from top management, but the relations described were carried on to such an extent that by means of them—and line pressures for manipulation of accounts in

the presumably impersonal auditing departments—certain line officers were able to show impressively low operating costs and thus win favor²⁴ with top management that would relieve pressures and be useful in personal advancement. In their turn the staff officers involved would receive more "cooperation" from the line and/or recommendation for transfer to the line. The data indicated that in a few such cases men from accounting and auditing staffs were given general foremanships (without previous line experience) as a reward for their understanding behavior.

SUMMARY

Research in three industrial plants showed conflict between the managerial staff and line groups that hindered the attainment of organizational goals. Privately expressed attitudes among some of the higher line executives revealed their hope that greater control of staff groups could be achieved, or that the groups might be eliminated and their functions taken over in great part by carefully selected and highly remunerated lower-line officers. On their side, staff members wanted more recognition and a greater voice in control of the plants.

All of the various functioning groups of the plants were caught up in a general conflict system; but apart from the effects of involvement in this complex, the struggles between line and staff organizations were attributable mainly to (1) functional differences between the two groups; (2) differences in the ages, formal education, potential occupational ceilings, and status group affiliations of members of the two groups (the staff officers being younger, having more education but lower occupational potential, and forming a prestige-oriented group with distinctive dress and recreational tastes); (3) need of the staff groups to justify their existence; (4) fear in the line that staff bodies by their expansion, and well-financed research activities, would

²² This case indicates the over-lapping of conflict areas referred to earlier. A later paper will deal with the area of informal union-management relations.

²³ In two of the plants a somewhat similar relation, rising from different causes, existed *inside* the line organization with the *operating* branch of the line successfully applying pressures for a share in funds assigned to the *maintenance* division of the line.

²⁴ The reader must appreciate the fact that constant demands are made by top management to maintain low operating costs.

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undermine line authority; and (5) the fact that aspirants to higher staff offices could gain promotion only through approval of influential line executives.

If further research should prove that staff-line behavior of the character presented here is widespread in industry, and if top management should realize how such behavior affects its cost and production goals—and be concerned to improve the condition—then remedial measures could be considered. For example, a corrective approach might move in the direction of (1) creating a separate body²⁵ whose sole function would be the coordination of staff and line efforts; (2)

²⁵ This body, or "Board of Coordination," would be empowered to enforce its decisions. Membership would consist of staff and line men who had had wide experience in the plant over a period of years. The Board would (a) serve as an arbiter between staff and line; (b) review, screen, and approve individual recommendations submitted; and (c) evaluate contributions after a trial period. Such a body would incidentally be another high status goal for seasoned, capable, and ambitious officers who too

increasing the gradations of awards and promotions in staff organizations (without increase of staff personnel); (3) granting of more nearly equal pay to staff officers, but with increased responsibility (without authority over line processes or personnel) for the practical working of their projects; (4) requiring that staff personnel have a minimum supervisory experience and have shared repeatedly in successful collaborative staff-line projects before transferring to the line; (5) steps by top management to remove the fear of veiled personal reprisal felt by officers in most levels of both staff and line hierarchies (This fear—rising from a disbelief in the possibility of bureaucratic impersonality—is probably the greatest obstacle to communication inside the ranks of management); (6) more emphasis in colleges and universities on realistic instruction in the social sciences for students preparing for industrial careers.

often are trapped by the converging walls of the pyramidal hierarchy.

ECOLOGICAL CORRELATIONS AND THE BEHAVIOR OF INDIVIDUALS

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INTRODUCTION

AN INDIVIDUAL CORRELATION is a correlation in which the statistical object or thing described is indivisible. The correlation between color and illiteracy for persons in the United States, shown later in Table 1, is an individual correlation, because the kind of thing described is an indivisible unit, a person. In an individual correlation the variables are descriptive properties of individuals, such as height, income, eye color, or race, and not descriptive statistical constants such as rates or means.

In an *ecological correlation* the statistical object is a *group* of persons. The correlation between the percentage of the population

which is Negro and the percentage of the population which is illiterate for the 48 states, shown later as Figure 2, is an ecological correlation. The thing described is the population of a state, and not a single individual. The variables are percentages, descriptive properties of groups, and not descriptive properties of individuals.

Ecological correlations are used in an impressive number of quantitative sociological studies, some of which by now have attained the status of classics: Cowles' "Statistical Study of Climate in Relation to Pulmonary Tuberculosis";¹ Gosnell's "Analysis of the

¹ *Journal of the American Statistical Association*, 30 (Sept., 1935), 517-536.

1932 Presidential Vote in Chicago,"² "Factorial and Correlational Analysis of the 1934 Vote in Chicago,"³ and the more elaborate factor analysis in *Machine Politics*;⁴ Ogburn's "How Women Vote,"⁵ "Measurement of the Factors in the Presidential Election of 1928,"⁶ "Factors in the Variation of Crime Among Cities,"⁷ and Groves and Ogburn's correlation analyses in *American Marriage and Family Relationships*;⁸ Ross' study of school attendance in Texas;⁹ Shaw's *Delinquency Areas* study of the correlates of delinquency,¹⁰ as well as the more recent analyses in *Juvenile Delinquency in Urban Areas*;¹¹ Thompson's "Some Factors Influencing the Ratios of Children to Women in American Cities, 1930";¹² Whelpton's study of the correlates of birth rates, in "Geographic and Economic Differentials in Fertility";¹³ and White's "The Relation of Felonies to Environmental Factors in Indianapolis."¹⁴

Although these studies and scores like them depend upon ecological correlations, it is not because their authors are interested in correlations between the properties of areas as such. Even out-and-out ecologists, in studying delinquency, for example, rely primarily upon data describing individuals, not areas.¹⁵ In each study which uses eco-

logical correlations, the obvious purpose is to discover something about the behavior of individuals. Ecological correlations are used simply because correlations between the properties of individuals are not available. In each instance, however, the substitution is made tacitly rather than explicitly.

The purpose of this paper is to clarify the ecological correlation problem by stating, mathematically, the exact relation between ecological and individual correlations, and by showing the bearing of that relation upon the practice of using ecological correlations as substitutes for individual correlations.

THE ANATOMY OF AN ECOLOGICAL CORRELATION

Before discussing the mathematical relation between ecological and individual correlations, it will be useful to exhibit the structural connection between them in a specific situation. Figure 1 shows the scatter

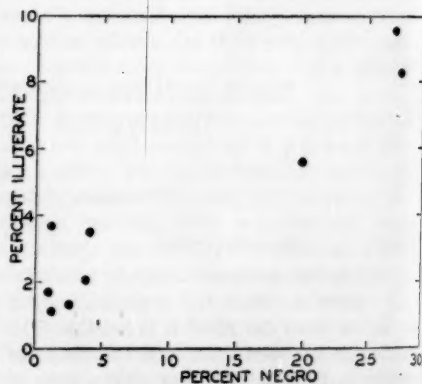


FIG. 1

diagram for the ecological correlation between color and illiteracy for the Census Bureau's nine geographic divisions of the United States in 1930. The X-coordinate of each point is the percentage of the divisional population 10 years old and over which is Negro. The Y-coordinate is the

² *American Political Science Review*, 24 (Dec., 1935), 967-984.

³ *Journal of the American Statistical Association*, 31 (Sept., 1936), 507-518.

⁴ Chicago, 1938.

⁵ *Political Science Quarterly*, 34 (Sept., 1919), 413-433.

⁶ *Social Forces*, 8 (Dec., 1929), 175-183.

⁷ *Journal of the American Statistical Association*, 30 (Mar., 1935), 12-34.

⁸ New York, 1928.

⁹ *School Attendance in the United States: 1920*, a supplementary report to the 1920 U. S. Census, Washington, 1924.

¹⁰ Chicago, 1929.

¹¹ Chicago, 1942.

¹² *American Journal of Sociology*, 45 (Sept., 1939), 183-199.

¹³ *Annals of the American Academy of Political and Social Science*, 188 (Nov., 1936), 37-55.

¹⁴ *Social Forces*, 11 (May, 1932), 498-513.

¹⁵ In Shaw's *Delinquency Areas*, for example.

percentage of the same population which is illiterate.¹⁶ The Pearsonian correlation for Figure 1, i.e., the ecological correlation, is .946.

Table 1 is a fourfold table showing for the same population the correlation between color and illiteracy considered as properties of individuals rather than geographic areas. The Pearsonian (fourfold-point) correlation for Table 1, i.e., the individual correlation, is .203, slightly more than one-fifth of the corresponding ecological correlation.

Ordinarily, such an ecological correlation

TABLE 1. THE INDIVIDUAL CORRELATION BETWEEN COLOR AND ILLITERACY FOR THE UNITED STATES, 1930
(for the population 10 years old and over)¹⁷

	Negro	White	Total
Illiterate	1,512	2,406	3,918
Literate	7,780	85,574	93,354
Total	9,292	87,980	97,272

would be computed on a county or state basis, instead of the divisional basis used here to simplify numerical presentation. Whether the ecological areas are counties, states, or divisions, however, the results are similar. Figure 2, for example, shows the ecological correlation on a state rather than a divisional basis. When the ecological areas are states, as in Figure 2, the ecological correlation is .773, to be compared with .946 when the ecological areas are divisions.

The connecting link between the individual correlation of Table 1 and the ecological correlation of Figure 1 is the individual correlations between color and illiteracy within the nine geographic divisions which furnish the nine observations for the ecological correlation. These are the *within-areas individual correlations*, a selection from which is given in Table 2.

¹⁶ These percentages were computed from the marginal totals of the fourfold tables given in Table 2.

¹⁷ The source for this and all following tables is the 1930 U. S. Census. All figures are in thousands.

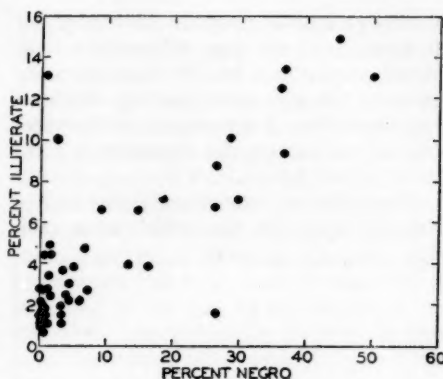


FIG. 2

Both the individual correlation and the ecological correlation depend upon the within-areas individual correlations, but in different ways. The individual correlation

TABLE 2. THE WITHIN-AREAS INDIVIDUAL CORRELATIONS BETWEEN COLOR AND ILLITERACY FOR THE UNITED STATES, 1930¹⁸

		Negro	White	Total
New England	Illiterate	4	240	244
	Literate	72	6,386	6,458
	Total	76	6,626	6,702
Middle Atlantic	Illiterate	32	719	751
	Literate	836	19,958	20,794
	Total	868	20,677	21,545
East North Central	Illiterate	36	392	428
	Literate	735	19,443	20,178
	Total	771	19,835	20,606
.				
Pacific	Illiterate	2	71	73
	Literate	75	6,332	6,407
	Total	77	6,403	6,480

¹⁸ The tables for the West North Central, South Atlantic, East South Central, West South Central, and Mountain divisions are omitted to save space.

(Table 1) depends upon the internal or cell frequencies of the nine within-areas individual correlations. Its cell frequencies are sums of the nine corresponding divisional cell frequencies. For example, in the upper left cell of Table 1 the frequency is $1,512 = 4 + 32 + 36 + \dots + 2$.

The ecological correlation (Figure 1) also depends upon the nine within-areas indi-

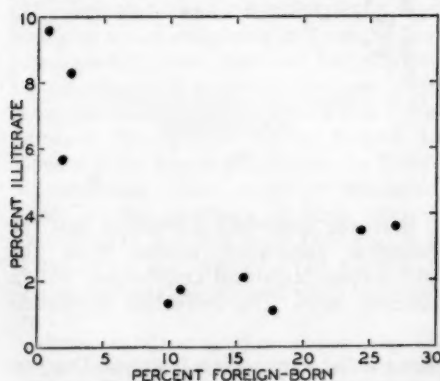


FIG. 3

vidual correlations, *but only upon their marginal totals*. For example, in Table 2 the marginal total for the first table shows 76,000 Negroes in the New England division. Since the total population for this division is 6,702,000, the percentage of Negroes is $100(76)/6,702 = 1.1$. The percentage of illiterates in New England is computed from the other marginal total in the same way.

In brief, the individual correlation depends upon the *internal* frequencies of the within-areas individual correlations, while the ecological correlation depends upon the *marginal* frequencies of the within-areas individual correlations. Moreover, it is well known that the marginal frequencies of a fourfold table do not determine the internal frequencies. There is a large number of sets of internal frequencies which will satisfy exactly the same marginal frequencies for any fourfold table. Therefore there are a large number of individual correlations which might correspond to any given ecological correlation, i.e., to any given set of marginal

frequencies. In short, the within-areas marginal frequencies which determine the percentages from which the ecological correlation is computed do not fix the internal frequencies which determine the individual correlation. Thus there need be no correspondence between the individual correlation and the ecological correlation.

An instance will document this conclusion. The data of this section show that the individual correlation between color and illiteracy is .203, while the ecological correlation is .946. In this instance, the two correlations at least have the same sign, and that sign is consistent with our knowledge that educational standards in the United States are lower for Negroes than for whites.

However, consider another correlation where we also know what the sign ought to be, viz., that between nativity and illiteracy. We know that educational standards are lower for the foreign born than for the native born, and therefore that there ought to be a positive correlation between foreign birth and illiteracy. This surmise is corroborated by the individual correlation between foreign birth and illiteracy, shown in Table 3. The individual correlation for Table 3 is .118.

TABLE 3. THE INDIVIDUAL CORRELATION BETWEEN NATIVITY AND ILLITERACY FOR THE UNITED STATES, 1930
(for the population 10 years old and over)

	Foreign Born	Native Born	Total
Illiterate	1,304	2,614	3,918
Literate	11,913	81,441	93,354
Total	13,217	84,055	97,272

However, the ecological correlation between foreign birth and illiteracy, shown in Figure 3, is $-.619$! When the ecological correlation is computed on a state rather than a divisional basis, its value is $-.526$.

THE MATHEMATICAL RELATION BETWEEN ECOLOGICAL AND INDIVIDUAL CORRELATIONS

Individual and ecological correlations, along with other correlations which also play

a part in the situation, are functionally related by one of the basic equations of the analysis of covariance.¹⁰ This equation can be derived from the following assumptions, which merely describe in mathematical terms the situation underlying an ecological correlation:

(1) There is a total group of N persons, who are characterized by two variable properties X and Y . These properties may be genuine variables such as age or income, or they may be dichotomous attributes such as sex or literacy.

(2) The N members of the total group can be put into m distinct sub-groups according to their geographic position, whether by census tracts, townships, counties, states, or divisions. It is convenient to think of these m sub-groups as defined by m values of a third variable A ($=$ Area) which is really an attribute, viz., geographic region.

The numerical values from which the ecological correlation is computed describe these m sub-groups. They may be means, medians, or percentages, and in fact all three are sometimes involved in a single ecological correlation analysis. Usually, however, they are percentages. While the mathematics applies to means as well, and approximately to medians also, it will simplify the present discussion to assume that X and Y are dichotomous properties, and therefore that the ecological correlation is a correlation between m pairs of percentages.

In the preceding section, three distinct correlations were shown to be involved in the ecological correlation situation. In mathematical terms, these correlations are described as follows:

The *total individual correlation* (r) is the simple Pearsonian correlation between X and Y for all N members of the total group, computed without reference to geographic position at all. If X and Y are dichotomous

properties, the total individual correlation will be a fourfold-point correlation based on a fourfold table (Table 1).

The *ecological correlation* (r_e) is the weighted correlation between the m pairs of X - and Y -percentages which describe the sub-groups. In the example of Section 2, r_e is the correlation between the nine percentages of Negroes and the nine corresponding percentages of illiterates. However, each cross-product of an X - and Y -percentage is weighted by the number of persons in the group which the percentage describes, to give it an importance corresponding to the number of observations involved.

Ordinarily, ecological correlations are computed without the refinement of weighting. While the weighted form is theoretically more adequate, and is required by the mathematics of this section, the numerical difference between the two is negligible. The weighted ecological correlation for Figure 1, which involves few observations and should therefore be very sensitive to weighting, is .946, while the corresponding unweighted value is .944.

The *within-areas individual correlation* (r_w) is a weighted average of the m within-areas individual correlations between X and Y , each within-area correlation being weighted by the size of the group which it describes.

Two correlation ratios, η_{XA} and η_{YA} , are also involved in the relation. Their purpose is to measure the degree to which the values of X and Y show clustering by area. If X is a dichotomous property, say illiteracy, then a large value of η_{XA} indicates wide variation in the percentage of illiterates from one area to another.

With these definitions, the relation between individual and ecological correlations may be written as

$$r_e = k_1 r - k_2 r_w, \quad (1)$$

where

$$k_1 = 1/\eta_{XA}\eta_{YA} \quad (1a)$$

and

$$k_2 = \sqrt{1-\eta_{XA}^2} \sqrt{1-\eta_{YA}^2} / \eta_{XA}\eta_{YA}. \quad (1b)$$

¹⁰ The derivation of this equation is not given here because of space limitations. Readers wishing a copy may secure one by sending a stamped, self-addressed envelope to W. S. Robinson, Department of Anthropology and Sociology, University of California, Los Angeles 24, California.

That is, the ecological correlation is the weighted difference between the total individual correlation and the average of the m within-areas individual correlations. In this weighted difference, the weights of the total individual correlation and the within-areas individual correlation depend upon the degree to which the values of X and Y show clustering by area.

Investigation of the relation given in (1) shows that an individual and ecological correlation will be equal, and the equivalency assumption will therefore be valid, when

$$r_w = k_3 r, \quad (2)$$

where

$$k_3 = \frac{1 - \eta_{XA} \eta_{YA}}{\sqrt{1 - \eta_{XA}^2} \sqrt{1 - \eta_{YA}^2}} \quad (2a)$$

However, the minimum value of k_3 in (2) is unity. Therefore (2) will hold, and the individual and ecological correlations will be equal, only if the average within-areas individual correlation is not less than the total individual correlation. But all available evidence is that (whatever properties X and Y may denote) the correlation between X and Y is certainly not larger for relatively homogeneous sub-groups of persons than it is for the population at large. In short, the equivalency assumption has no basis in fact.

The consistently high numerical values of published ecological correlations in comparison with the smaller values ordinarily got in correlating the properties of individuals suggest that ecological correlations have some reason for being larger than corresponding individual correlations. The relation given in (1) shows what this reason is, for it gives as the condition for the numerically larger value of the ecological correlation

$$r_w < k_3 r, \quad (3)$$

where k_3 is given by (2a). Since the minimum value of k_3 is unity, equation (3) implies that the ecological will be numerically greater than the individual correlation whenever the within-areas individual correlation is not

greater than the total individual correlation, and this is the usual circumstance.

Habitual users of ecological correlations know that the size of the coefficient depends to a marked degree upon the number of sub-areas. Gehlke and Biehl, for example, commented in 1934²⁰ upon the positive relation between the size of the coefficient and the average size of the areas from which it was determined. This tendency is illustrated in Section 2, where the ecological correlation between color and illiteracy is .773 when the sub-areas are states and .946 when the sub-areas are the Census Bureau's nine geographic divisions. The same tendency is shown by the correlations between nativity and illiteracy, the value being $-.526$ on a state basis and $-.619$ on a divisional basis.

Equation (1) shows why the size of the ecological correlation depends upon the number of sub-areas, for the behavior of the ecological correlation as small sub-areas are grouped into larger ones can be predicted from the behavior of the variables on the right side of (1) as consolidation takes place. As smaller areas are consolidated, two things happen:

(1) The average within-areas individual correlation increases in size because of the increasing heterogeneity of the sub-areas. The effect of this is to *decrease* the value of the ecological correlation.

(2) The values of η_{XA} and η_{YA} decrease because of the decrease in the homogeneity of values of X and Y within sub-areas. The effect of this is to *increase* the value of the ecological correlation.

However, these two tendencies are of unequal importance. Investigation of (1) with respect to the effect of changes in the values of η_{XA} , η_{YA} , and r_w indicates that the influence of changes in the η 's is considerably more important than the influence of changes in the value of r_w . The net effect of changes in the values of the η 's and of r_w taken

²⁰ "Certain Effects of Grouping upon the Size of the Correlation Coefficient in Census Tract Material," *Journal of the American Statistical Association*, 24 (Mar., 1934, Supplement), 169-170.

together, therefore, is to increase the numerical value of the ecological correlation as consolidation takes place.

CONCLUSION

The relation between ecological and individual correlations which is discussed in this paper provides a definite answer as to whether ecological correlations can validly be used as substitutes for individual correlations. They cannot. While it is theoretically possible for the two to be equal, the conditions under which this can happen are far removed from those ordinarily encountered in data. From a practical standpoint, there-

fore, the only reasonable assumption is that an ecological correlation is almost certainly not equal to its corresponding individual correlation.

I am aware that this conclusion has serious consequences, and that its effect appears wholly negative because it throws serious doubt upon the validity of a number of important studies made in recent years. The purpose of this paper will have been accomplished, however, if it prevents the future computation of meaningless correlations and stimulates the study of similar problems with the use of meaningful correlations between the properties of individuals.

NEIGHBORHOOD INTERACTION IN A HOMOGENEOUS COMMUNITY

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THE STUDIES reported here arose out of a previous attempt by one of the writers to demonstrate the absence of secure empirical evidence for two propositions which are rather generally accepted in the discussion of urbanism: (1) that residential mobility is a progressive function of community growth; and (2) that residential mobility is in some sense a cause of family disorganization.¹

In the consideration of these problems, it soon became evident that answers must be sought on the level of the face-to-face neighborhood, which may be considered either as the smallest of locality groups,² or as the largest of the primary groups.³

¹Theodore Caplow, "Residential mobility in a Minneapolis sample," *Social Forces*, Vol. 27, May 1949.

²Rural sociologists use the term *neighborhood* chiefly in this sense. It is defined by Davies as "a small geographic area inhabited by a cluster of families with a sense of local identification and unity." See Vernon Davies, "Neighborhoods, townships and communities in Wright County, Minnesota," *Rural Sociology*, Vol. 8, March 1943, which includes citations to the relevant literature.

The few available studies on urban neighborhoods and neighboring focussed attention either upon the neighborhood as a locality group⁴ or upon neighboring as an interpersonal process.⁵ It appears to us, however, that the importance of the neighborhood as a unit of investigation lies precisely in its double aspect; and that the ecological and interpersonal elements of neighboring need to be considered simultaneously.

To do this, it was necessary to study the correlates of neighborliness, together with the patterns of inter-family relationship in

³Cooley considered it to be one of the three basic primary groups, comparable to family and play group. See his *Social Organization*, 1909.

⁴Cf. R. D. McKenzie, *The Neighborhood: a Study of Columbus, Ohio*, University of Chicago Press, 1923; E. V. Zorbaugh, *The Gold Coast and the Slum*, University of Chicago Press, 1929.

⁵The most extensive study is that of Jessie Bernard, "An instrument for the measurement of neighborhood with experimental applications," *South Western Social Science Quarterly*, September 1937, pp. 145-160. A somewhat different approach was used by Frank L. Sweetser, "A new emphasis for neighborhood research," *American Sociological Review*, Vol. VII, 4, August 1942, pp. 525-533.

the residential area. The pilot study, undertaken in the Winter of 1948, was based upon a non-selected sample of 134 neighborhoods in the Minneapolis-St. Paul metropolitan district. Its major instrument was a Neighborhood Interaction Scale designed to measure the amount of informal interaction between the responding family and each of its neighbor families.

The findings of the pilot study tended to support our expectations that little direct association would be found between mobility and isolation on the neighborhood level. At the same time, it raised questions which appeared to us to be of considerably greater significance than the initial hypotheses, and which seem to involve the basic mechanisms of group formation.

In this original study, it was not found practicable to verify the respondent family's report on its neighboring relationships by interviewing each of the other families with whom it reported association. A supplementary difficulty arose from the impossibility of evaluating the sampling, since we know virtually nothing about the universe of neighborhoods within a given metropolitan community. Moreover, our working definition of a neighborhood as "a family dwelling unit and the ten family dwelling units most accessible to it" was far too crude for general application. It appeared to us that these inadequacies could be overcome only by research directed to the clarification of the neighboring process itself. What was needed, therefore, was a relatively homogeneous and clearly defined residential area in which the entire population could be interviewed.

Such an area was found in University Village, a student housing project owned and operated by the University of Minnesota. A block of 50 family dwelling units, occupied by married veterans with children, was selected, and each of the 50 families interviewed in a four-week period in the Spring of 1949. The basic instrument used was the Neighborhood Interaction Scale. Each respondent family was asked to describe its relationship to every one of the other families in the block, as well as to families in other blocks of University Village. While the inter-

vals between the scale-points are unknown, the rank order is believed to be correct. The scale reads as follows:

NEIGHBORHOOD INTERACTION SCALE		
Scale Value	Description	
0	Do not know their names or faces.	
1	Recognize them on the street, but have only a greeting acquaintance.	
2	Stop and talk with them outside regularly. (Only one adult from each family involved)	
3	Stop and talk with them outside regularly. (All adults involved)	
4	Mutual aid and/or common activities. (Involving one adult from each family)	
5	Mutual aid and/or common activities. (Involving all adults)	
6	Mutual visiting and entertaining in each other's houses, including drinking or dining.*	

In addition to the scale, the interview included information on the number and age of children; the age, academic status, and outside employment of the husband; the activities of the wife; the family's length of residence in the Village and in its present dwelling unit; a level of living scale based on the possession of furniture and appliances; a count of relatives' households in the metropolitan district; the Chapin Formal Social Participation Scale; and a number of open-ended questions on adjustment.

* This is a sociometric scale in the sense set forth by F. S. Chapin in "The Relation of Sociometry to Planning in an Expanding Social Universe," *Sociometry*, Vol. VI, 1943, p. 235. "Sociometry . . . may then be defined as the science of social measurement." More specifically, the Neighborhood Interaction Scale is similar to the scales developed by Moreno and his associates in that it permits the diagramming of relationships and the graphic analysis of group organization. It differs, however, in being a presumable report of actual behavior rather than of subjective preference. In practice, both methods may produce similar results in any given group, although they are based on different assumptions. At least two other sociometric studies concerned with related problems have used reports on interactional behavior rather than interactional preferences. See Paul Deutschberger, "Interaction Patterns in Changing Neighborhoods: New York and Pittsburgh," Beacon House, *Sociometry Monographs*, No. 18, 1947, and Charles P. Loomis "Political and Occupational Cleavages in a Hanoverian Village, Germany," Beacon House, *Sociometry Monographs*, No. 16, 1947.

This material provides some insight into a considerable variety of related problems:

1. The first category is what may be roughly described as *micro-ecology*. Within this block of 50 dwelling units, we have a reasonably reliable measure of the relationship between each pair of families, as described independently by each of them. The data may be combined with the length of residence of each family, the exact position of each dwelling unit (see Figure 1) and the functional significance of "lanes" and "rows" to give us a rather minute description of basic distributional factors.

2. *Community structure*. It became apparent as the interviewing proceeded that the block itself must be regarded as a community since it was so identified by its residents and possessed a definite internal structure. It was thus possible to study stratification, clique formation, formal leadership, group integration, and the influence of mobility in some detail.

3. The data could be made to yield a number of attributes for each family, which seemed to be related to such diffuse traits as popularity, leadership, seclusiveness, and selectivity. A typical index of this kind was one which reported the ratio of the family's close relationships with "outsiders" to the total of its close relationships with families in the block. A somewhat more complex measure, tentatively described as social expansiveness, was derived by comparing the ratings given and the ratings received for each family.

Much to our surprise, the comparison of these family attributes with such background factors as age, length of residence, level of living, outside employment, and formal participation, gave results which were quite inconclusive. A study designed to get at "individual differences" in social expansiveness is now under way, but the summary which follows is concerned only with "micro-ecology" and community structure.

Before turning to the detailed findings, it is necessary to note a number of parallel developments which enabled us to envisage the possibilities of neighborhood research more clearly.

In October, 1949, several months after the completion of the University Village study, there was made available to us, through the kindness of Dr. Stanley Schachter, the unpublished manuscript of the Westgate study undertaken at Massachusetts Institute of Technology in 1946.⁷ Although we had no conscious knowledge of the earlier Westgate study, the fields are remarkably similar, and the methods parallel. Westgate—a student housing project of M.I.T.—contains an equally homogeneous population (except that some families are childless) and was designed and occupied under nearly identical conditions. Data similar to ours were derived from all families by use of the sociometric question, "What three people in Westgate or Westgate West do you see most of socially?"

The curious parallelism of the two studies is further illustrated by the independent invention of a number of concepts. Among these are the distinction between physical distance (linear measurement) and functional distance (accessibility); the concept of social expansiveness; the development of the same definition of a clique; the concept of passive or unavoidable contact; and the concept of chain-distance. In collaboration with Messrs. Albert Perry and Duncan Luce, the M. I. T. investigators developed a method for the application of matrix multiplications to the analysis of sociometric patterns which provides the number of two-step, three-step, or n-step connections between items in a given sociometric pattern. This information, which is crucial in the analysis of intra-group communication, was secured in crude form by graphic inspection of the University Village data.

A second study whose results are of crucial importance for neighborhood research was that of rumor undertaken by Stuart Dodd and his associates at the Duwamish Housing Project in Seattle.⁸ This study converges

⁷ Leon Festinger, Stanley Schachter and Kurt Back, *Social Influence*, Harper & Bros., 1950.

⁸ Stuart C. Dodd, Ruth A. Inglis, and Robert W. O'Brien, "Interracial and Other Tensions in a Public Housing Project," Washington Public Opinion Laboratory, mimeographed, 17 pp. See also, "A Measured Wave of Interracial Tension: partially

with both the Westgate and the University Village study at two points: (a) the emphasis upon micro-ecology, particularly upon the effects of accessibility, and (b) the function of channels of communication in the spread of rumor.

Another set of possibilities was suggested by the work of students in a seminar on urban sociology conducted by Caplow in the Spring of 1949. The seminar, searching for some quantitative expression for the sociopsychological differences between urban and rural environments and among communities having different degrees of "urbanism," developed a mathematical formulation of Cohesion, which enables any social environment to be compared with any other with respect to an operationally defined characteristic which is tentatively identified as social cohesion.⁹ This conceptualization was at first entirely theoretical, but it later appeared that both the Westgate study and the University Village study provide a framework within which this measure may be empirically applied.

FINDINGS

Micro-Ecology. In the pilot study of 134 non-selected neighborhoods, the mean rating of relationships with each respondent family's ten closest neighbors was 1.47, barely above a casual greeting relationship, although the mean length of occupancy of respondents' dwelling units was 12.2 years. There were moderate but significant correlations between the mean rating and various indices of the "quality" of the residential district derived from the age of buildings,

density of population, and median rent. Districts of single-family houses showed marked advantages in neighboring over apartment house and mixed districts.

The negative findings were more striking. Above a minimum length of residence of one year, there was no discernible relationship between length of residence and the closeness or intensity of neighboring relationships. A variety of social factors such as age of children, possession of a car, ownership or rental tenure and size of family, showed no correlation with neighboring, except that similarity to a neighbor in any of these respects contributed somewhat to a closer relationship.

The block selected in University Village differs most sharply from these diversified neighborhoods in three respects: the uniformity of dwelling units; the relatively short length of residence, with consequent high mobility; and the social homogeneity of the population.

Figure 1 illustrates the arrangement of units in a block of 5 double rows. As will appear below, the experientially meaningful aspect of this arrangement is the division of the block into 4 interior lanes of 10 units each, and 2 exterior lanes of 5 units.

The mean length of residence for the 50 Village respondents was 14.86 months. The maximum length of residence was 23 months; the minimum 1 month.¹⁰ The mean scale rating of the association between each family and the 9 nearest families was 2.89—conspicuously higher than that found in the diversified neighborhoods where the average length of residence was about ten times as great.

While the test-tube is not unflawed, a surprising number of social variables were controlled by the selection of University Village tenants. With one exception (a widower and two children) each family in our sample consists of a husband, wife, and at least one minor child. There are no servants or relatives in the households. All

testing the intertactance hypothesis," mimeographed, 24 pp., same source.

⁹ The gist of this concept is that an appropriate measure of the individual's social environment is the amount of interaction among the persons with whom he interacts. This may be expressed for any individual by taking the ratio of actual to theoretical combination-pairs found in a sociometric diagram which includes all of the persons with whom he sustains interaction above a designated minimum level. The ratio will approach zero for the anomic urban individual, and unity for the member of an isolated folk-society. The group average of such individual ratios may be tentatively considered as a measure of social cohesion.

¹⁰ The maximum length of residence in Westgate was even less, being 15 months in one section of the project, and 5 months in the new addition, at the time of interviewing.

of the husbands are students, all family heads are between the ages of 21 and 39; all of the husbands are veterans and all of the wives, including 8% who work outside the home, are housewives. By far, the larger number of both husbands and wives are native-born residents of Minnesota, and all residents are white. It was not possible, for administrative reasons, to secure exact data on income, but at least half of the families

conductive to favorable adjustment than it appears to be here.

The total amount of social interaction within the block is enormous. This may be derived in two ways. We may consider the score for each family to be the sum of all the ratings it gives to relationships between itself and others (Out-Score); or we may use instead the sum of all the ratings given to it by others (In-Score). The means are almost

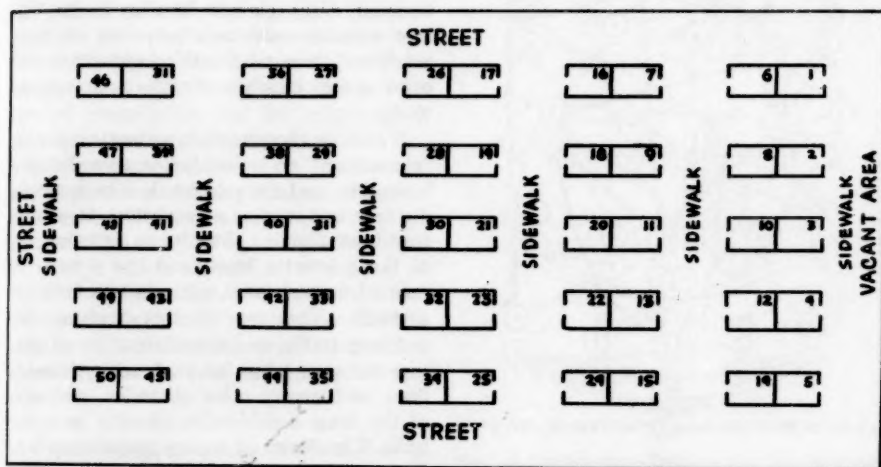


FIG. 1. University Village-Plan of the Sample Block.

report no source of income besides the \$120 government allowance.

In discussing the implications of this homogeneity, at least one qualification should be inserted. Both University Village and Westgate are characterized by high morale and a high measure of reported satisfaction with both the physical facilities and the social opportunities. It is curious that in both projects, the phrase "we're all in the same boat" appeared again and again in connection with expressions of satisfaction. Undoubtedly, the homogeneity of the community accounts in part for the high morale, but other conditions—the more or less imminent goal of graduation, and the expectation of future mobility—should not be overlooked. It is conceivable, at any rate, that homogeneity in a prison colony might be less

identical, being respectively 46.74 and 45.78, but the In-Scores—being in effect the combined ratings of a group of "judges"—have a somewhat smaller standard deviation. If we consider relationships with a scale value of 1 to be minimal, and those with a scale value of 4 to be reasonably close, it is obvious that the Village resident engages in an amount of neighboring roughly equivalent to a minimal relationship with each of the other families in the block, or to a close relationship with more than ten of his neighbors. In fact, the mean number of other families known was 17.

8. The total amount of interaction (score) in either form represent a combination of 2 dimensions of association—the number of families known, and the average closeness of the association (mean rating). It might

be plausibly suggested that these two components of the total score would be inter-related; more specifically, it was expected that as the number of families known increased, the average intimacy of all reported relationships would decrease. This did not

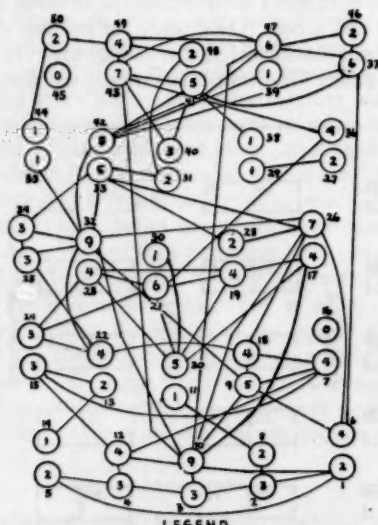


FIG. 2. Sociometric Relationships in University Village. All close relationships within the block.

prove to be the case. The inter-correlations are as follows:

Mean Rating with No. of Ratings	$+.15 \pm .14$
Number of Ratings with Total Score	$+.80 \pm .05$
Total Score with Mean Rating	$+.53 \pm .11$

An extension of the social circle in this milieu apparently involves a *net* increase in social interaction. Conversely, there does not appear to be any "fund" or "lump" of sociability, to be exhausted by intimate and exclusive relationships.

If this interpretation is correct, we might expect that the effect of long residence would be to expand the circle of acquaintance rather than to increase the intensity of association. This, indeed, appears to be the case. The product-moment correlation between number of months in the dwelling unit and Neighborhood Interaction Score is

$+.52 \pm .10$. But the correlation of length of time in the unit with mean rating is only $+.08 \pm .14$. In other words, the increase in neighboring score with length of residence is entirely attributable to an increase in the number of acquaintances made. This is consistent with our finding in the pilot study that intensity of relationship did not increase with length of residence; and it supports the hypothesis that more symbiosis is unlikely to lead to intimacy in the residential neighborhood. Although new families in the Village associate with relatively few of their neighbors, these relationships apparently become quite intimate within a matter of weeks.

If time be considered, in some sense, as an "elementary" ecological factor, then distance is another, and distance involves both simple distance and routine accessibility. It will be seen from Figure 1 that the 10 units in each of the 4 interior lanes, and the 5 units in each of the end lanes, open on to a common sidewalk. The use of this footway for ordinary traffic, and the obstruction of passage between lanes by mud, snow, laundry lines, and sundry other obstacles, give each of the lanes considerable identity as social units. The degree of in-lane association is so high that it may almost be taken for granted that any two families in the same lane are acquainted. A comparison of the mean rating of relationships within the lane and the mean rating of the relationships in the nearest contiguous lane for each of the 50 families produces the following table (after combination):

	FREQUENCY OF MEAN LANE RATINGS		
	0-1.9	2.0-2.9	3.0 plus
Own Lane	6	14	30
Contiguous	35	10	5

The chi-square obtained was 45.53. For 2 degrees of freedom, a chi-square of 11.34 is significant at the 1% level. The derived contingency coefficient was .57. Because there were no mean lane ratings greater than 2.0 for more distant lanes, the analysis in this direction could not be carried further. This fact itself, however, demonstrates the overwhelming influence of propinquity.

Within the lane, a further distinction may be made between units immediately adjacent or opposite and those farther away. A comparison of ratings given to families in nearest and farthest units of the same lane by the method used above gives us a contingency coefficient of .48.¹¹

Community Structure. The sociometric diagrams, Figures 2 and 3, are based upon close and "verified" relationships; that is, a line is drawn between families who mutually rated their relationship as 4 or higher.¹² Figure 2 shows all such close relationships within the block (the distance and arrangement of the units have been distorted for ease of presentation, but the relative position of the units is unchanged).

It is at once apparent that the block is an integrated community. Only 2 of the 50 families are isolates: all of the others are involved in a network of fairly intimate relationships which extends from one end of the block to each other. The maximum chain-distance between any two families involves eight steps, but there are ready channels of communication between each lane and every other.

¹¹ These findings are exactly parallel to those of the Westgate study. Table 13, for example, shows the ratio of choices given to possible choices in a number of categories.

Own Court	.133
Adjacent Court	.025
Other Courts	.007
Other part of project	.001

Table 14 shows the relationship of sociometric choices to physical distance among the houses in row (roughly comparable to a lane in University Village).

Units of approximate Physical Distance	Ratio of actual to possible choices
1	.271
2	.083
3	.042
4	.000

Social Influences, op. cit.

¹² A rating below 4 signifies a relationship in which neither family makes an effort to interact with the other, the association being confined to situations where they encounter each other in the course of other activities. A rating of 4 or more implies a deliberate attempt to associate. It is this type of relationship which will hereafter be designated as "close."

The presentation of the diagram immediately raises several vital questions. To what extent is the integration of the block attributable to the participation of a group of leaders? Does the integration of so large a group inhibit or promote the formation

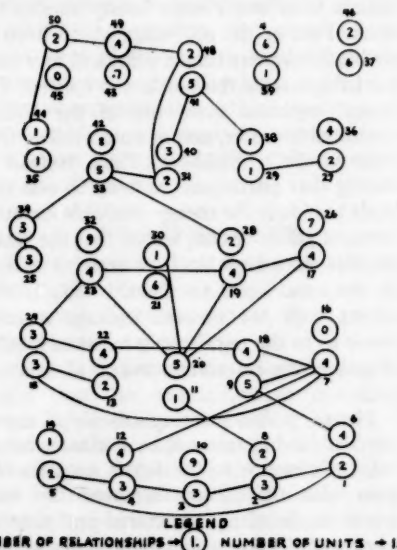


FIG. 3. Sociometric Relationships in University Village. Relationships between families having only five or less close relationships.

of cliques? What evidences can be found for formal stratification? These questions will be taken up in order.

There are five families which have 7 or more close relationships with other families in the block. A sixth family, having only 6 such relationships has 3 of them with these "stars." Together, the six families (Numbers 10, 26, 32, 42, 43, 47) may be considered to occupy "star" positions on the sociometric diagram. It will be seen from Figure 2 that these six families have close associations with twenty families besides themselves, and that these associations form a network covering the entire block.

That the selection of these "stars" is not entirely fortuitous is illustrated by a variety of characteristics which these six families have in common. All of the six have some

measure of formal participation, although thirty-one of the families in the block have no formal social participation at all. The husbands in five of the six families have part-time jobs taking 16 or more hours a week. All six families have at least close associations with at least one Village family outside the block. Five of the six "stars" have lived in the block for more than a year, and four have lived there since the block was opened. The "stars" reported more use of the Village Community center, and of automobiles, than most of their neighbors. Thus, instead of finding that participant activity in one area tends to reduce the energy available for other forms of participation, we see that the "star" families show high levels of activity in most of the areas open to them.¹³ This is consistent with the general findings reported above as to the relationship between number of acquaintances and intimacy of relationship.

Figure 3 shows the relationships among families having fewer than 6 close relationships. Reference to the figure suggests that even with the "stars" removed the block would be definitely structured and channels of communication would exist from each lane to every other. While position as a "star" is by no means equivalent to formal leadership, there is a hint here that the adequately integrated group may be integrated, in a sense, at two different levels. Indeed, in the long run it must be, if it is to survive changes in its membership without serious damage.

In a group of this size with its very high level of personal interaction, common sense or at least common cynicism would antici-

¹³ The theory of limited social expansiveness, which this finding contradicts, is set forth by Lundberg and Steele who note that, "The conspicuous tendency to make a few choices offers some support to the theory of limited social expansiveness. Aside from possible motives of expediency . . . it is also possible that the diffusion of one's social energies among a large group may weaken the intensity of one's emotional bonds with selected smaller groups." ("Social Attraction Patterns in a Village," *Sociometry*, Vol. I, 1937.) It is possible that this conclusion would have been reversed if their data had been able to differentiate degrees of intensity of relationships.

pate the formation of cliques. A reasonable operational definition of a clique in the milieu being studied would be a group of families all having close relationships with each other and none having close relationships with other families in the block. This definition would not, of course, eliminate more casual associations with other neighbors.

However, inspection of Figure 2 reveals that there are no families which meet even this rather elastic criterion. As a matter of fact, there are only three groups of four families each of which exhibit all possible interrelationships, and two of these involve a total of only five families (the 2 configurations centered on Family #21). This aggregation of five families comes fairly close to being an independent structure or clique, but the other close relationships which its members have within the block clearly prevent it from being a closed system.

While no causal relationship has been demonstrated between the integration of the complete block on two separate levels and the absence of clique formation, it is here presented as an hypothesis that the existence of cliques as autonomous structure is inhibited by the integration of the larger group.¹⁴

The third and perhaps most important phase of community structure to be considered is the evidence of stratification. There is at least a suggestion in many of the more recent community surveys of the inevitability of stratification, and the suggestion has been made explicit by Form in a recent study of Greenbelt. He concludes that, "Large status differences should not be expected in settlements whose populations are selected on the basis of their homogeneity. Nevertheless, despite efforts to limit stratification, some of it appears inevitable."¹⁵ Because this proposition, if valid, has serious implications

¹⁴ While the Westgate study contains a good deal of data on clique, formation, the matter is too complex to be summarized here. In general, their findings seem to us consistent with this hypothesis.

¹⁵ William H. Form, "Status Stratification in a Planned Community," *American Sociological Review* X (October 1945), 613.

for democratic social planning, it deserves close examination.

In the first place, it must be noted that University Village is considerably more homogeneous than Greenbelt where the occupations of residents ranged from physician and college professor to truck driver and janitor. Moreover, Form points out that "... the planned nature of Greenbelt was responsible for a situation which gave particularly high status to the politically powerful." With two strong factors operating to produce stratification, it is not difficult to see how it arose in Greenbelt, "despite efforts to limit" it. But the Greenbelt experience appears to us to present no conclusive evidence of a general strain toward stratification in the homogeneous community.

On the basis of a careful examination of the evidence, we are unable to detect any status stratification in University Village. That its existence was denied by a number of residents who were graduate students in the social sciences and presumably qualified observers is merely suggestive.¹⁶ What is more significant is the outcome of a number of tests for stratification which could be applied. Two of these tests are summarized below.

In the event of distinct stratification, we would expect that some or all of the "star" families would be of high status. To anticipate otherwise would be to disregard the entire massive evidence on the relationship between status and social participation. But in such case, the tendency for other families to exaggerate their association with the status bearing families should be as marked as it has been in other studies and would be reflected by the "star" families having higher In Scores than Out Scores. In other words, if the "star" families were of higher status, they would presumably report less interaction with their neighbors than their neighbors claimed with them. On the contrary, it was found that only one of the six "stars" had a higher In Score than Out Score.

A second test for stratification was made

with the level of living scale used in the study. Although we are reluctant to lean very heavily upon this unvalidated instrument, it is a perfectly straightforward numerical summation of important visible possessions, and we know of no instance where such a scale has not reflected status in a stratified community. Yet when we compare level of living with total interaction, mean intensity of relationships, or a measure of social expansiveness derived by comparing ratings, given and received, the chi-square test gives us no probability significant at the 5% level.

SOME IMPLICATIONS

It was suggested at the outset that the pilot study seemed to us to raise questions far more significant than the original hypotheses about mobility.

There is distinct evidence in the foregoing pages that the assumption so frequently found in the literature of urban sociology¹⁷—that mobility is the *cause* of non-association—is, at the very least, oversimplified. The University Village sample—as mobile a family population as can be discovered in the urban milieu—has a rate of interaction about as high as one would expect in an isolated farming community. Perhaps it would be more reasonable to assume that those factors—the substitution of interest for primary groupings, the increasingly fine ramifications of status systems, the failure of communication channels to develop in the larger community—which are likely to elicit a high degree of spatial mobility also tend to inhibit association on the basis of proximity. In somewhat different terms, we may say that where the neighborhood and the interest group coincide, there will be a high degree of association, regardless of whether the milieu is urban or rural, stable or mobile.

¹⁷ A typical expression of this viewpoint is found in Noel P. Gist and L. A. Halbert, *Urban Society*, Thomas Y. Crowell Co., 3rd ed, 1948, pp. 272-273: "Wherever mobility takes the form of frequent changes of residence, neighborhood life tends to decline because individuals and families have insufficient time to become socially established and thereby develop an interest in persons living near them."

¹⁶ Courtney B. Cleland, "Personality Interaction in the University Village," Unpublished manuscript, University of Minnesota, 1947.

Conversely, isolation and immobility do not of themselves foster social participation.

The findings which seem to us to go beyond the question of mobility are (1) the degree of interaction in University Village, which is extraordinarily high in absolute amount; (2) the almost mechanical effect of accessibility upon intimacy, and of time upon the number of relationships; (3) the absence of any observable "automatic" stratification; (4) the apparent tendency of neighborhood integration to inhibit the formation of cliques; (5) the presence of a group structure integrated on the level of the "leaders" and again of the "followers"; (6) the tendency for high participation in one area to be accompanied with high participation in other areas.

It is at once apparent that the characteristic which we have called "homogeneity" is of crucial importance in group formation. We have no reason to suppose that the psychological variability of Village residents is especially low; nor can we characterize them as having a common culture, except to the extent that Americans in general may be so characterized. Nevertheless, the type of informal organization which has been described is, in its essentials, closer to the *sacred* than to the *secular* community.

The students at the University Village are, of course, not literally living in a *sacred* society. The absence of traditional sanctions, and their thorough involvement in the metropolitan milieu, make such a notion ludicrous. All that is claimed is that the type of organization they have developed rests essentially upon what Durkheim described as mechanical solidarity, rather than upon the complicated interdependence of differential statuses which is characteristic of modern society at large.

Much of the recent discussion about group formation has been tinged unconsciously with the experience of the middle-class citizen in organizing small voluntary interest groups, so that we have come to think of

social participation as something grudgingly offered and easily withdrawn. Nevertheless, there is a wealth of material on the play-group, the informal organization in industry, and the association of institutional inmates, which suggests that only very powerful inhibiting factors can prevent intensive and intimate interaction among persons of similar status wherever opportunity affords.¹⁸

Among these status differentials, perhaps the most significant are those arising from differences in occupation, level of living, and family composition. The effects of ethnic, religious and racial differences are equally important, but it is notable that most urban neighborhoods tend toward homogeneity on these factors.

What makes University Village diverge so strikingly from the run of urban neighborhoods is the accidental but thorough elimination of the first three of these status differences. Occupations, we have noted, are identical. The design and furnishing of the dwelling units have the effect of reducing differences in level of living, and family composition is by the rules of eligibility standardized. With these obstacles removed, neighborhood interaction rises to an extremely high level and organizes itself with almost molecular simplicity in terms of the spatial pattern of the community.

Research in this field has barely begun, but it is already apparent that the processes of group formation may be more amenable to analysis than has been supposed. Certainly it is evident that the selection of intimate associates is in large measure a function of a social situation rather than of individual whimsy, and is therefore capable of being predicted in some detail.

¹⁸ Cf. Georg Simmel, "The Sociology of Sociability," (tr. E. C. Hughes) *American Journal of Sociology*, Vol. LV, November 1949. "While all human associations are entered into because of some ulterior interests, there is in all of them a residue of pure sociability or association for its own sake."

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ASSIMILATION TO THE ECOLOGICAL AND SOCIAL SYSTEMS OF A COMMUNITY*

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THE DISSONANCE between "classical" ecological theory and empirical investigation has led, during the past decade, to the development of a school of ecological thought known as "sociocultural" ecology.¹ As is well known, the "classical" ecologists assumed human society to be organized around two basic processes, competition and communication. Each of these processes gives rise to different orders in society: competition to the biotic or ecological, and communication to the moral or social.² Since biotic, subsocial factors determine the ecological structure of human communities, quite as they do the distribution of plants and animals, their analysis and measurement was thought to be the special task of the ecologist.

Such a view, however, virtually ignored the factor of culture, which differentiates human from animal societies. Because of this, the "sociocultural" ecologists now seriously question the importance which was attached to "biotic," "subsocial," "impersonal," "natural," and "strictly economic" factors. They insist that ecological theory must be modified to take cognizance of the fact that human activities are organized within a sociocultural framework, and that competition operates within, rather than

without, this system.³

Determination of the relative validity of either the "classical" or the "sociocultural" theory must be made by empirical research. The findings of a research project reported in this paper are offered as a contribution toward the resolution of this problem, and in anticipation they may be said to support the latter theory.⁴ The project concerns the residential movement and distribution of New Haven Italians from 1890 to 1940, and the relationship of this movement to their incorporation into the social system of the city.

New Haven is a predominantly industrial city with a population of 160,605 in 1940, of which approximately three-fifths were immigrants and their children. The Italians were the largest of the immigrant groups, with the first and second generations comprising nearly 27 per cent of the city's population. The first year in which a sizable number of Italians resided in the city was 1890, when they totalled 2,330, or nearly three per cent of the population.

New Haven has been divided ecologically by Davie into twenty-five natural areas based upon social and physical criteria.⁵ Three of these are the central business, the industrial, and the university (Yale) sections of the city. In addition to these, there are twenty-two "natural" areas which are primarily residential. These have, in turn, been classified into six major class areas which possess varying degrees of status-value. Area I has the highest status-value, and the other

* Paper read at the annual meeting of the American Sociological Society held in New York, December 28-30, 1949.

¹ See the following for expressions of the "sociocultural" point of view: Warner E. Gettys, "Human Ecology and Social Theory," *Social Forces*, 18 (May, 1940), 469-476; August B. Hollingshead, "A Re-examination of Ecological Theory," *Sociology and Social Research*, 31 (Jan.-Feb., 1947), 194-204; Walter Firey, *Land Use in Central Boston*, Cambridge, 1947.

² R. E. Park, "Human Ecology," *American Journal of Sociology*, XLII (July, 1936), 1-15; R. E. Park, "Reflections on Communication and Culture," *American Journal of Sociology*, XLIV (Sept., 1938), 187-205.

³ Hollingshead, *op. cit.*

⁴ See Christen T. Jonassen, "Cultural Variables in the Ecology of an Ethnic Group," *American Sociological Review*, 14 (Feb., 1949), 32-41, for further empirical evidence supporting the "sociocultural" theory.

⁵ Maurice R. Davie, "The Pattern of Urban Growth," in G. P. Murdock (ed.), *Studies in the Science of Society*, New Haven, 1937, pp. 133-162.

five follow in descending numerical order. A description of these six residential areas is found in Table I.

In the 1890's the Italians were concentrated in residential Areas V and VI, but especially in Area VI, which contained nearly 70 per cent of the entire number.⁶ The main Italian settlement centered then, as now, around the Wooster Square section of residential Area VI, and the primary

were still living in the two lowest status areas in the latter year. Despite this continued concentration, they had begun to move into other sections of the city at an early date. By 1900 some had invaded Areas II and IV, and by 1920 they had settled in all the residential areas. Since then, this movement away from Areas V and VI has increased to such an extent that by 1940 17 per cent were living in other districts.

TABLE I. NEW HAVEN RESIDENTIAL AREAS BY PREDOMINANT CHARACTERISTICS¹

Area	Per Cent of Householders	Land Use	Nativity	Religion	Occupation	Income above or below \$1500	Social Register 1,002	Graduates Club ⁴ 340	Who's Who in America 179	Delinquency Rate	Dependency Rate
I	6.2	1-fam. of high valuation	Native-born of native parents	Protestant	Prof. & Bus. Exec.	Well above; Largest group—\$3,000-\$7,000	715	279	141	Very low	Very low
II	16.2	2-fam. & 1-fam.	Mixed ²	Mixed ³	Office-wkrs. & Dirs. & Prop.	Above; Modal group—\$1,500-\$3,000	233	59	32	Low	Very low
III	5.3	2-fam. & 1-fam.	Mixed	Catholic	Office-wkrs. & Artisans	Half & Half	32	8	4	Low	Low
IV	13.2	2-fam.	Mixed	Catholic	Artisans & Laborers	Below although $\frac{1}{2}$ of families are above	13	2	1	Average	Average
V	37.2	2-fam. of low valuation	Mixed	Catholic	Laborers & Artisan	75%-90% of families below	7	1	1	High	High
VI	21.9	2-3- & multi-fam. of low value	Foreign-born	Catholic	Laborers	Nearly all below	2	0	0	Very high	Very high

¹ This description is of conditions as they existed in the early 1930's.

² *Mixed nativity*—native-born of native parents, native-born of foreign or mixed parents, and foreign-born.

³ *Mixed religion*—Protestant, Jew, and Catholic.

⁴ A leading gentlemen's club.

reason for first settlement there was the availability of cheap housing.

Although the percentage of Italians residing in Area VI declined from 69 in 1890 to 61 in 1920, over nine-tenths of them

⁶ The data for the distribution of the Italian population were secured from a twenty per cent sample of householders with Italian names listed in the New Haven City Directories for each decennial year from 1890 to 1940 inclusive. Although errors are bound to occur in utilizing names as an index of ethnic origin, it is the only means of identification we have in such a study. Evidence in this and other studies in New Haven indicates that Italian names are easily identified and that name changing is not common among the group.

The significance of Italian mobility cannot be fully understood, however, without reference to the distribution and movement of the total New Haven population as well. To show what this relation is I have used a "quota fulfillment index." This index, which enables Italian distribution and movement to be expressed numerically, represents the ratio between the percentage of Italians in a given residential area and the percent-

⁷ The distribution of the total population was secured from a twenty per cent sample of all householders listed in the New Haven City Directories for each decennial year from 1890 to 1940 inclusive.

age of the total population residing in the same area. A quota fulfillment index of 100 signifies that the proportion of Italians in a given area is what would be expected on a proportional population basis. An index of less than 100 indicates an under-representation, and one of above 100 a concentration, of the group in any area.

While the proportion of Italians residing in Area VI declined from 1890 to 1920, as already noted, their relative concentration increased, with the quota fulfillment index rising from 181 to 231 (see Table II). Since 1920 this index has declined, but the figure of 206 in 1940 indicates that more than twice as many Italians as would be expected on a proportional population basis still reside there. The Italian index for all other areas has been increasing since the turn of the century, showing a steady Italian flow into them (see Table II).

neighborhoods. They wish for more comfortable living quarters, less crowding, more privacy, and increased social prestige. Moreover, they desire to acquire their own homes. Since there are practically no single-family and few good two-family residences in Area VI, home-ownership generally has required a move into another residential area.

The second conditioning factors are those which relate to the group's incorporation into the social system of the city. To examine their nature, we shall now turn to evidence selected from the occupational and the political sub-systems of the New Haven community. Specifically, we shall examine Italian progress in them in relation to residential mobility. Both systems, like the residential, are hierarchical, and movement in them will be traced by utilizing the same quota fulfillment index discussed previously.⁸

Positions in the occupational system of

TABLE II. ITALIAN QUOTA FULFILLMENT INDICES ACCORDING TO RESIDENTIAL AREAS: 1890-1940

Residential Area	1890	1900	1910	1920	1930	1940
I	0	0	0	3.39	8.39	11.36
II	0	5.73	8.08	9.55	16.79	18.86
III	0	0	32.16	29.79	67.60	64.68
IV	0	13.14	14.30	26.73	51.40	63.87
V	81.50	73.69	81.47	87.16	101.05	111.13
VI	181.46	205.89	206.11	230.88	222.74	205.96

Examination of Table II indicates that Italian residential dispersion has assumed a definite pattern: generally, the higher the position of an area in the residential hierarchy, the less does Italian distribution resemble that of the total population. As a group the Italians have now (1940) attained a distribution similar to that of the total population in Area V, and approximately two-thirds of such a distribution in Areas III and IV. They remain greatly under-represented, however, in the top status residential areas, having attained an index of less than 20 in Area II and only slightly more than 10 in Area I.

Two sets of forces are at work producing this mobility pattern. The first of these is the desire by Italians to move into better

New Haven have been arranged according to Edwards' sixfold classification:⁹

1. Professional persons
2. Proprietors, managers, and officials
3. Clerks and kindred workers
4. Skilled workers and foremen
5. Semiskilled laborers
6. Unskilled laborers

⁸ Occupational data were secured from New Haven City Directories and U. S. Census Reports for each decennial year from 1890 to 1940 inclusive. Data on Italians and total population in political positions were secured from New Haven City Yearbooks, New Haven Manuals of City Government, and municipal records such as lists of departmental employees and pay roll records.

⁹ U. S. Bureau of the Census, *Alphabetical Index of Occupations by Industries and Social-Economic Groups*, prepared by Alba M. Edwards, Washington, 1937, pp. 3-4.

TABLE III. ITALIAN QUOTA FULFILLMENT INDICES ACCORDING TO EDWARDS' SOCIAL-ECONOMIC GROUPINGS: 1890-1940

Occupational Group	1890	1900	1910	1920	1930	1940
Professional	0	9.16	11.34	27.45	46.37	43.92
Proprietors, managers, officials	38.15	103.81	90.25	129.52	133.81	93.95
Clerks	0	19.24	26.17	24.14	48.87	63.22
Skilled	64.72	76.46	78.90	68.64	102.87	119.70
Semiskilled	—	—	87.77	100.19	120.03	125.84
Unskilled	—	—	201.02	244.49	142.92	123.90

In the New Haven political system are included all municipal elective, appointive, and civil service positions. In terms of status-value the positions fall into the following main levels listed according to descending status-value:¹⁰

- A. mayor; department heads and key executives such as the superintendent of education, corporation counsel, and health officer; bureau, committee, and commission positions such as park commissioner and member of the board of education.
- B. aldermen; elected city executive officials such as town clerk, treasurer, and city sheriff; appointive executive and professional personnel such as assistant librarian and probation officer; school teachers.
- C. clerical workers; justices of the peace; selectmen; grand jurors; constables; policemen; firemen.
- D. janitors; custodians; laborers.

The figures in Tables III and IV reveal that the Italians have been progressively in-

¹⁰ This grouping of political positions has been arranged by the author on the basis of discussions and interviews with the following persons: public officeholders such as the registrar of vital statistics and the assistant corporation counsel; municipal employees such as clerks, policemen, and janitors; and various citizens. In addition, the author's own knowledge of the situation gained through actual field work and library research has been utilized.

corporated into the occupational and political systems, no less than into the residential. Furthermore, the pattern of advance is similar in all three. With only one major exception, the amount of mobility into an occupational group or a political level has been inversely proportional to the position of the group or level in the hierarchy (see Tables III and IV). The major exception is that Italians early attained a distribution similar to that of the total population in the "proprietor, manager and official" occupational group. This arises from limitations in the Census' occupational classification, and is due to the fact that among most new immigrant groups there are a large number of small retail dealers and proprietors. The overwhelming majority of Italians in the "proprietor, manager, and official" group are in such positions, and few are business executives or officials. Therefore the group has not achieved as high a status in this occupational group as is indicated by its index. Otherwise, the inverse relationship generally holds.

Residential dispersion is part of the group's incorporation into the dominant social system. Ecological and social factors are interrelated, and it is only by abstraction that they can be separated. For example, movement into a higher status

TABLE IV. ITALIAN QUOTA FULFILLMENT INDICES ACCORDING TO POLITICAL LEVELS: 1890-1940

Political Level	1890	1900	1910	1920	1930	1940
A	0	0	0	21.26	12.28	33.46
B	0	0	3.41	9.97	14.77	23.59
C	12.20	14.44	9.45	12.75	20.99	27.58
D	0	0	0	14.72	47.42	44.69

neighborhood requires an adequate income to afford more expensive housing. Strictly economic factors, however, are not alone involved; there must also be a conscious desire to advance in the economic system.

This relationship between social and ecological factors is illustrated by Italians who live in the better neighborhoods. As they advance in the occupational and political systems, they move into higher status areas. One Italian, now a world famous physician, lived and practiced in the main Italian settlement in Area VI as a young man. As his reputation and practice improved he moved up the hierarchy, and for the last quarter of a century has resided in one of the top status neighborhoods in Area I. The present mayor, a man of Italian descent, recently moved into an exclusive Area I neighborhood after four years in office. Many Italians, as they become financially successful, try to break into upper class society, and to accomplish this they must live in the proper neighborhood. Thus two Italians, partners in a very successful general contracting business, have just moved into Area I, after several decades of residential climbing. When they started in business both lived in Area VI, but after becoming successful had moved into Area II.

Advance in the social system, of course, is not limited to the sub-systems examined in this paper. For example, the sons of the general contractors mentioned above either are attending or have attended Yale, and the world famous physician is a member of the Graduates Club and is clinical professor emeritus at Yale.

At the same time that these factors operate to produce upward mobility there are others which retard it. One such important factor is the higher cost of housing in sections outside residential Area VI. The higher the position of an area in the residential hierarchy, the greater is the value of the property and the higher the rents and selling prices. Just as important is the pressure applied from within by the residents of the old neighborhood and from without by those of the prospective new one. The Italian is looked down upon for living in

the slums, yet when he moves to a better neighborhood he arouses resentment. He is considered an upstart and is frequently ostracised. At the same time, the former neighbors of an upward mobile Italian often think that he is getting "too good" for them, and they drop their friendship with him. Recently, increasing numbers of Italians have been accepted into higher status neighborhoods, but have become alienated from their own group.

These restrictive attitudes of non-Italians hinder the group's advance, and channel its opportunities not only in the residential system but in others as well. For instance, an Old Yankee police captain told me with great concern that an increasing number of Italians are applying for positions on the force. "If they are hired in large numbers," he said, "the force will deteriorate." That discrimination is effective in the political system, as well as in the occupational and residential, is apparent from an examination of the Italian indices in Tables II, III, and IV.

We conclude that sociocultural forces both hinder and facilitate the residential movement of Italians. Even though the first generation is dying off and the third generation already reaching maturity, old prejudices against the Italians still persist among the non-Italian population, and act as effective barriers to their residential movement. At the same time, the Italians are consciously striving to move upward. Furthermore, their residential dispersion tends to be related to their assimilation to the dominant social system. The causative factors appear to be multiple. They include the cultural values and attitudes of the dominant group, the desires and opportunities of the Italians themselves, and the greater cost of housing in higher status residential areas.

Even the high cost of housing, which appears to be strictly economic, involves many cultural elements. These explain why Italian immigrants could not originally afford housing outside the slums. In Italy they had been uneducated peasants; here they were able initially to get only the lowest paying and

least skilled jobs. Even today strictly economic factors are not solely responsible for their under-representation in higher status neighborhoods. It is of course true that to move into such areas they must first advance to better paying jobs to afford the more expensive housing. Nevertheless, movement out of residential Area VI into areas of higher status-value has consistently lagged so far behind corresponding movement in the occupational system that the factor of income alone cannot account for the difference. An additional factor is acceptance by the residents of the higher class residential neighborhoods. Also, assimilation must hold out such promises of reward that Italians are willing to give up their old friends and way of life in an ethnic neighborhood in order to move into a strange, sometimes hostile, higher class area.

Not only are multiple social and cultural factors thus responsible for residential dispersion, but residential distribution itself has important cultural implications. For example, the continued over-representation of the group in residential Area VI has attracted unfavorable attention to it. Although only 45 per cent of the group resided within the area in 1940, Italians are identified with this slum area, and to them are attributed the undesirable characteristics of slum dwellers. Thus, residential distribution is partially responsible for some of the persisting attitudes toward the group held by non-Italians. Typical is the attitude of one old New Havener, a retired railroad repairman, who describes the Italians as ". . . dirty, filthy *Wops* who would make a pig pen out of any house you gave them, no matter how nice it was to start with."

One final illustration will suffice to show

how ecological and social factors are interwoven. A recent mayoralty election in New Haven, in which the Republican incumbent was of Italian descent but the Democratic candidate was not, was won by the Republican with a plurality of 712 votes out of a total of 73,026 cast. The deciding factor in his close victory was the overwhelming vote given him by the wards lying in the heart of the main Italian district. The plurality of 1819 (2,772 to 953) which he received in these two wards more than offset the inroads the Democratic candidate made into the usual Republican vote in other sections of the city. In the 1947 election, when the Democratic candidate as well was of Italian descent, the present mayor carried the two wards by only 589 votes (1,752 to 1,163). In state and national elections, on the other hand, these two wards return a substantial Democratic plurality. Hence, ecological factors influence social ones, and vice versa.

In conclusion, it is apparent that ecological dispersion cannot be understood solely in terms of "biotic," "subsocial," "natural," "impersonal," or "strictly economic" factors. Men are not only physical beings motivated by biotic forces, but are human beings as well, motivated by culturally determined drives and values. Competition is not impersonal, but, on the contrary, quite personal and deliberate. Men compete, not as abstractions, but as human beings within a socio-cultural framework in which cultural values and usages are tools which regulate the competitive process. Therefore, we conclude that the residential dispersion of a minority group is due to multiple sociocultural, interrelated factors, and can only be understood as part of the group's incorporation into the dominant social system.

THE APPLICATION OF ANALYSIS OF COVARIANCE IN SOCIAL SCIENCE RESEARCH*

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THIS paper treats the problem of matching experimental groups used in sociological research. It proposes the substitution of mathematical matching techniques, for case matching, where the data permit treatment by regression and analysis of variance as these two combine to form analysis of covariance. It attempts to clarify the function of analysis of covariance: (1) by showing how, in the classical "before-after" experimental design, the significance of the difference between final expected and final observed scores is the basic element in analysis of covariance; (2) by showing how regression techniques and analysis of variance combine to form the mathematical manipulations of covariance; and (3) by comparing the meaning of variance, analysis of variance, and analysis of covariance. It presents a pattern, which the student may follow in setting up a problem in covariance, designed to permit the computation and interpretation of a covariance quotient, without his being thoroughly versed in all the algebra of covariance. Finally, it illustrates how covariance may be used to test differences which cannot be tested by simple ratio techniques.

I. THE UTILITY OF ANALYSIS OF COVARIANCE

The more extensive use of analysis of covariance would permit the elimination of inconvenient matching procedures in much research, without sacrificing precision of control. The technique would not only permit economies in time and energy in proposed "before-after" experiments, but also make possible more stringently controlled analysis of data gathered without regard to matching or without thought of using them

to show associated variation in time between two or more variables. Analysis of covariance can be the key to sociological knowledge now locked in data which defy efficient handling by other currently used forms of analysis.

Stringency of control achieved with the more commonly used frequency type of matching is inversely related to size of class intervals. This fact places the sociologist in the dilemma of choosing between decreasing the size of class intervals to achieve stringency of control, *the primary incentive for matching*, with concomitant loss in size of sample or increasing the size of class intervals to save sample cases with concomitant loss in stringency of control.

The need for recognizing the importance of this relationship between loss in size of sample and stringency of control in social science research, where the gathering of basic data is often a time-consuming and expensive process, is emphasized by the fact that relatively broad interval frequency matching tends to eliminate from two-fifths to four-fifths of the cases. Precision matching has resulted in loss of over 90 per cent of the original sample.¹

Lindquist summarizes the point in commenting on the practice of matching: "This of course means a loss of valuable information, and this loss may sometimes offset any advantage gained by the use of equated groups. It is therefore fortunate for the educational experimenter that the methods of analysis of covariance—an extension by R. A. Fisher of his methods of analysis of variance—now enable us to dispense with these inconvenient matching procedures and to secure the same increase in precision by

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¹ Stuart Chapin, *Experimental Designs in Sociological Research*, New York: Harper and Brothers Publishers, 1947, pp. 39, 45, 67, 102.

the use of statistical controls."²

These "statistical controls" are to be gained through the application of analysis of covariance. If his optimism is warranted as it applies to educational research, there is no reason to presuppose that covariance promises less to other social science research.

II. THE FUNCTION OF REGRESSION AND ANALYSIS OF VARIANCE IN ANALYSIS OF COVARIANCE

This paper presents *analysis of covariance*, primarily in one of its simpler applications, the analysis of "before-after" data. When so used, covariance has two functions: (1) it utilizes regression techniques to statistically matched groups by cancelling out the effect of initial score differences on final scores; (2) it applies analysis of variance to these adjusted final scores to determine the significance of the difference between groups after allowing for initial score differences. It therefore makes assumptions, as to the characteristics of the data, similar to those implied in the use of analysis of variance and regression techniques.

The basic nature of the statistical manipulations and the underlying logic in the "matching" function of analysis of covariance are illustrated in Table 1. The regression coefficient of X on Y is 1, since each Y score is 1 greater than its corresponding X score. The mean of all the X scores initial scores is 3, and of all the Y scores final scores is 4. Column "d" gives the mean of initial scores, column "e" the estimated final scores, and "f" the adjusted final scores.

By regression analysis it can be shown that the final score of an individual in a group may be estimated by assuming a parallel between the relationship of his initial score to the mean of the group's initial scores, and the relationship of his final score to the mean of the final scores. Then, if his initial score is far above the initial mean of his group, his final score would be

expected to be far above the final mean of his group; if his initial score is near the initial mean of the group, his final score should be near the final group mean, other things being equal. The equation of a straight line ($Y' = a + bX$, where Y' is the estimated final score, a the value of Y when X is 0, and b the value of the regression coefficient) may be used to make such an estimate statistically.

Application of "The Normal Equations for Straight Line" to this example confirms that $a = 1$ and $b = 1$. We substitute, to obtain the estimated final score of case "a":

$$\begin{aligned} Y' &= a + bX \\ &= 1 + (1)(1) \\ &= 2 \text{ (as shown in column "e").} \end{aligned}$$

This estimated final score, $Y' = 2$, may be thought of as the final score which any individual, whose initial score is 1, would be expected to receive. Any variation from it would indicate the influence of some factor

TABLE 1. EXAMPLE OF COMPUTATION OF EXPECTED AND ADJUSTED SCORES

Case (a)	X (b)	Y (c)	\bar{X} (d)	Y' $a+bX$ (e)	adj Y^* $Y-bx$ (f)
a	1	2	3	2	4
b	2	3	3	3	4
c	3	4	3	4	4
d	4	5	3	5	4
e	5	6	3	6	4
Sums	15	20		20	20
Means	3	4		4	4

* For derivation of adjusted Y see Lindquist, *op. cit.*, p. 182.

other than initial score difference. Likewise, any initial score of 2 would demand a final score of 3, all other things being equal, and so on through all X scores for the above example.

Columns "c" and "e" show that in this example the observed final scores all coincided with the expected (or estimated) final scores. Had there been any deviation of observed from expected scores, these devia-

² E. F. Lindquist, *Statistical Analysis in Educational Research*, Boston: Houghton Mifflin Company, 1940, Chap. VI, p. 180.

tions would be attributable to factors other than original score differences. It is self-evident that where there is no difference in observed and expected scores, the means of the two will coincide; in this case $\bar{Y} = 4$ and $\bar{Y}' = 4$.

It follows that when **two groups** are drawn at random from a completely homogeneous sample (homogeneous in degree of shift), the value of their observed group means will always be the same, within the limits of chance error for random sampling, as their expected group means. Furthermore, if the total deviation of the expected final means for each of the groups within a sample from their respective observed means is statistically significant, it would indicate that the null hypothesis, which claims that there is no real difference between the two groups, does not apply. This statistically significant difference is, as was indicated above, independent of original score variations because the deviations of expected from final scores incorporate statistical correction for original score differences, using the regression of Y on X . This, in principle, is the heart of covariance.

The test of statistical significance referred to in the preceding paragraph is based on the ratio of the variance of adjusted means (i.e., adjusted on the basis of "within groups" regression to eliminate initial score differences) about the mean of the entire sample to the sum of the variances within the groups of the sample. The term "variance" should here be interpreted as the sum of the deviations squared divided by the degrees of freedom. It may be noted that the deviations of expected scores or group means from their respective final scores or group means are equal in value to the comparable deviations of adjusted scores or means from their respective final means. As analysis of variance is based on these deviations, the end results of the two approaches to covariance (through expected scores and through adjusted scores) will be identical.

The relative function of analysis of covariance in a "before-after" type of experiment is clarified further in Figure 1. Let Figure

1A represent a function of variance, 1B a function of analysis of variance, and 1C a function of analysis of covariance.

Variance is an average of squared deviations of scores from their mean (i.e.: $\Sigma x^2/n - 1$).³ Variance can therefore be thought of as a summary of the variation of scores from their mean in a distribution represented by the area under the curve in Figure 1A.

Analysis of variance treats the difference between two distributions of scores (see curves a and b in Figure 1B, with their respective means, \bar{a} and \bar{b}). Analysis of variance can be applied to indicate whether there is a statistically significant difference between these two groups on the factor measured by determining the relationship between the variance of their group means and the sum of variances within the groups.⁴

In testing the null hypothesis which suggests itself (that the two series of scores represented by distributions a and b in Figure 1B are each a series of independent observations drawn at random from a single homogeneous universe, and that therefore there is no real difference between them), the important question is, "What is the probability that the observed difference between \bar{a} and \bar{b} is due to other than chance variation in sampling?" To answer statistically, knowledge of at least three variables is es-

³ The relationship of variance and standard deviation may be represented by the equations $V = \sigma^2$ or $\sqrt{V} = \sigma$.

⁴ For more extended discussions of analysis of variance see: Morris M. Blair, *Elementary Statistics*, New York: Henry Holt and Co., 1944, Chap. 21; Allen L. Edwards, *Statistical Analysis*, New York: Rinehart and Company, Inc. 1946, Chaps. 10 and 11; R. A. Fisher, *Statistical Methods for Research Workers*, London: Oliver and Boyd, 1946, Chaps. 7 and 8; E. F. Lindquist, *Statistical Analysis in Educational Research*, New York: Houghton Mifflin Company, 1940, Chap. 5; Frank A. Pearson and Kenneth R. Bennett, *Statistical Methods*, New York: John Wiley and Sons, Inc., 1942, Chaps. 19 and 20; Charles C. Peters and Walter R. Van Voorhis, *Statistical Procedures and Their Mathematical Bases*, New York: McGraw-Hill Book Company, Inc., 1940, Chap. 12; George W. Snedecor, *Statistical Methods*, Ames, Iowa: Collegiate Press, Inc., 1937, Chaps. 10 and 11.

essential: (1) the size of the observed difference ($\bar{a} - \bar{b}$) if the critical ratio of the difference is to be used, or the variance of \bar{a} and \bar{b} from the estimated total population mean if analysis of variance is applied; (2) the variance of the first mean (\bar{a}); and (3) the variance of the second mean (\bar{b}).

nitude to consistently exceed that magnitude of the estimated variance within groups which would be expected to occur less than 5 per cent of the time, the difference between the two groups is statistically significant at the 5 per cent level. The null hypothesis would thus stand refuted. The vari-

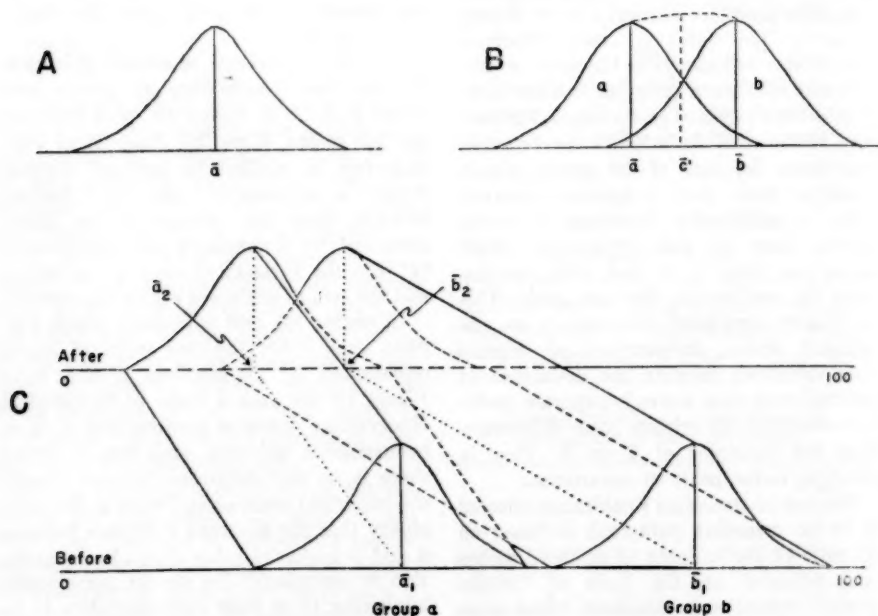


FIG. 1. Diagrammatic Illustration of the Function of: A. Variance, B. Analysis of Variance, C. Analysis of Covariance.

Since the hypothesis assumes the two groups to be drawn at random from a homogeneous population, an estimate of the true mean of the population (\bar{c}) may be obtained by computing the mean for the entire sample, $(\sum X_1 + \sum X_2)/N_1 + N_2$. An estimate of the variance of the estimated mean (\bar{c}), may be derived in similar fashion, using the mean variance of the observed means, \bar{a} and \bar{b} . It then follows logically that if the difference between the means, as expressed in terms of variance of the group means from the total sample mean, is of sufficient mag-

nitude, or coefficient of variance, F , when used to test the difference between group means, is thus a ratio of the variance of group means ("between groups" variance) to "within groups" variance. Since the size of the variance between group means is directly dependent on the relative size of the difference between those means ($\bar{a} - \bar{b}$), and since the size of the variance within groups is directly related to the sum of deviations within groups a and b, the greater the ratio of the latter to the former, the greater will be the value of F and, in

turn, the greater the probability that the difference between the means is due to other than chance sampling error.⁶

The social statistician who has mastered the concept of variance and its functions will readily comprehend the analysis of covariance. The latter merely adds regression techniques to analysis of variance. In its final analysis, *covariance indicates the degree of probability that the relative differences in the shifts of two or more groups on one or more factors do not exceed such relative magnitudes, respectively, as to each respectively represent a series of independent observations drawn at random from the same homogeneous population.* It may be used to "match" groups on other factors than initial score, and it permits "matching" or "controlling" on other concomitant factors along with initial score differences.

Figure 1C deals with *analysis of covari-*

⁶ To the author the statement often found in the literature on variance that the larger variance is divided by the smaller appears confusing. Assume that the two distributions as illustrated in Figure 1B are the same as shown, except that the value of the two means is identical. Then the chances of the two groups representing different population universes could, by inspection, be seen to be, at most, negligible. The within groups variances would still be as large as before, but the between groups variance would approach zero. If then the larger within groups variance is divided by the diminutive between groups variance, the quotient, or F , would be very sizeable. As a progressively larger F is taken to indicate a respectively increased significance of difference between the groups, it leads to the absurd conclusion, in terms of the statistical significance of the two differences within each of two pairs of distributions (the pair in Figure 1B and the same pair given identical means), that the difference within that pair whose difference between means approaches zero should be more significant than the difference in the pair with a relatively large difference between means. The between groups variance is always divided by the within groups variance when solving the variance ratio for F in testing for significance of difference between means. Only when testing for the similarity (i.e., absence of difference) of means, may the positions of the F ratio values be inverted; and when so inverted (*within* groups over *between* groups), the F table may be used to determine the F value necessary to indicate that the similarity of means is statistically significant at a given level.

ance. In the classical "before-after" experiment, the social scientist is frequently confronted with the question of the relative significance of the differential shifts of two groups on a common factor. In Figure 1C two groups, a and b , are represented, their initial means falling at points on the scale from 0 to 100 as indicated by \bar{a}_1 and \bar{b}_1 respectively. Their final means, \bar{a}_2 and \bar{b}_2 , each fall short of their respective initial score means. Since both show a lower final than initial score, and since group b appears to have declined more than group a , the primary problem is to determine the statistical significance of this difference in degrees of change. As explained earlier, the initial score differences can be cancelled statistically by adjusting the final scores by use of regression techniques. This provides a common denominator for final score deviations, only differences due to chance sampling and factors other than initial score differences remaining. In effect, it finds the regression line most nearly common to both groups and then tests the significance of the two group regression lines only in terms of differences in slope.

To these residual deviations, left after initial score differences have been extracted, can then be applied simple analysis of variance. For this reason the covariance ratio may be solved and interpreted in the same manner as the variance ratio, F . This combination of regression and variance, the former to adjust the scores and the latter to test the significance of residual difference, is analysis of covariance.

III. COMPUTATION OF COVARIANCE RATIOS

An example designed especially to show each step in the analysis of covariance follows (Table 2). Its tables and equations are arranged in a pattern specifically designed to serve as a general framework for easy computation of covariance ratios. As the specific values of individual expected or adjusted scores, and their individual deviations themselves, are not of interest here, computations have been simplified (sections

TABLE 2. AN EXAMPLE OF COMPUTATION OF ANALYSIS OF COVARIANCE

Section Number	Male (Group I)					Female (Group II)				
I	X_1	Y_1	X_1^2	Y_1^2	X_1Y_1	X_2	Y_2	X_2^2	Y_2^2	X_2Y_2
	4	3	16	9	12	4	3	16	9	12
	3	1	9	1	3	3	3	9	9	9
	2	2	4	4	4	5	4	25	16	20
	4	3	16	9	12	3	2	9	4	6
	2	1	4	1	2	5	3	25	9	15
	15	10	49	24	33	20	15	84	47	62
	Sample ¹ Segment	N	Score	Means		Sums of Scores	Sums of Squares		Sums of Products	
2	Male Group	$n_1 = 5$	Initial	$\bar{X}_1 = 3.0$	$\sum X_1 = 15$	$\sum X_1^2 = 49$	$\sum X_1Y_1 = 33$			
			Final	$\bar{Y}_1 = 2.0$	$\sum Y_1 = 10$	$\sum Y_1^2 = 24$				
3	Female Group	$n_2 = 5$	Initial	$\bar{X}_2 = 4.0$	$\sum X_2 = 20$	$\sum X_2^2 = 84$	$\sum X_2Y_2 = 62$			
			Final	$\bar{Y}_2 = 3.0$	$\sum Y_2 = 15$	$\sum Y_2^2 = 47$				
4	Total Sample	$N_t = 10$	Initial	$\bar{X}_t = 3.5$	$\sum X_t = 35$	$\sum X_t^2 = 133$	$\sum X_tY_t = 95$			
			Final	$\bar{Y}_t = 2.5$	$\sum Y_t = 25$	$\sum Y_t^2 = 71$				
		Sums of squares and products				Errors of estimate				
5	Source of Variation	Degrees of Freedom	$\sum x^2$	$\sum xy$	$\sum y^2$	Sum of Squares	Degrees of Freedom	Mean Square ²		
6	Total	9	10.5	7.5	8.5	3.143	8			
7	Between	1	2.5	2.5	2.5					
8	Within	8	8.0	5.0	6.0	2.875	7			.4109
9	Difference for testing adjusted means					0.268	1			.268
10	$F = \frac{\text{Mean square diff.}}{\text{Mean square within}} = \frac{.268}{.4109} = .652$ (the coefficient of covariance)									
11	$\sum x_t^2 = \sum X_t^2 - \frac{(\sum X_t)^2}{N_t}$					$= 133 - \frac{(35)^2}{10} = 10.5$				
12	$\sum y_t^2 = \sum Y_t^2 - \frac{(\sum Y_t)^2}{N_t}$					$= 71 - \frac{(25)^2}{10} = 8.5$				
13	$\sum xy_t = \sum X_tY_t - \frac{\sum X_t \sum Y_t}{N_t}$					$= 95 - \frac{(35)(25)}{10} = 7.5$				
14	$\sum x_w^2 = \sum X_1^2 - \frac{(\sum X_1)^2}{n_1} + \sum X_2^2 - \frac{(\sum X_2)^2}{n_2}$					$= 49 - \frac{(15)^2}{5} + 84 - \frac{(20)^2}{5} = 8$				
15	$\sum y_w^2 = \sum Y_1^2 - \frac{(\sum Y_1)^2}{n_1} + \sum Y_2^2 - \frac{(\sum Y_2)^2}{n_2}$					$= 24 - \frac{(10)^2}{5} + 47 - \frac{(15)^2}{5} = 6$				

TABLE 2. (Continued)

Section Number		
16	$\sum xy_w = \sum X_1 Y_1 - \frac{\sum X_1 \sum Y_1}{n_1} + \sum X_2 Y_2 - \frac{\sum X_2 \sum Y_2}{n_2}$	$= 33 - \frac{(15)(10)}{5} + 62 - \frac{(20)(15)}{5} = 5$
17	$\sum x_b^2 = \sum x_t^2 - \sum x_w^2$	$= 10.5 - 8.0 = 2.5$
18	$\sum y_b^2 = \sum y_t^2 - \sum y_w^2$	$= 8.5 - 6 = 2.5$
19	$\sum xy_b = \sum xy_t - \sum xy_w$	$= 7.5 - 5.0 = 2.5$
20	$\sum (Y_t - Y'_t)^2 = \sum y_t^2 - \frac{(\sum xy_t)^2}{\sum x_t^2}$	$= 8.5 - \frac{(7.5)^2}{10.5} = 3.143$
	(Total sum of squares for errors of estimate)	
21	$\sum (Y_w - Y'_w)^2 = \sum y_w^2 - \frac{(\sum xy_w)^2}{\sum x_w^2}$	$= 6.0 - \frac{(5.0)^2}{8.0} = 2.875$
	(Sum of squares for errors of estimate within groups)	

¹ The subscripts designate the group to which the item has reference: t = total sample; w = within group or groups; b = between groups (generally based on group means values).

² Mean square equals the sum of squares of errors of estimate divided by the degrees of freedom ($n-1$).

* These values may also be obtained by use of the equations $\sum x_b^2 = n_1(\bar{X}_1 - \bar{X})^2 + n_2(\bar{X}_2 - \bar{X})^2$, etc.

20 and 21 of Table 2) by using $\sum y_t^2 - (\sum xy_t)^2 / \sum x_t^2$ to obtain the desired corrected *total sum of squares for errors of estimate*, and using $\sum y_w^2 - (\sum xy_w)^2 / \sum x_w^2$ to obtain the corrected *within groups sums of squares for errors of estimate*, as $\sum (Y - Y')^2 = \sum y^2 - (\sum xy)^2 / \sum x^2$.

The necessary basic summaries of the data to be analyzed consist of the sums of the initial and final scores for each group, in this case male ($\sum X_1$ and $\sum Y_1$) and female ($\sum X_2$ and $\sum Y_2$) respondents; the sums of the initial and final squared scores ($\sum X_1^2$, $\sum X_2^2$, $\sum Y_1^2$ and $\sum Y_2^2$) for each group respec-

tively; the sum of the products ($\sum X_1 Y_1$ and $\sum X_2 Y_2$); and the number of observations in each group and in the total sample. It is advisable to set these up in a table such as may be found in sections 2-4. All items in sections 2 and 3 are obtained by summation directly from the data in section 1, except the means, which are readily computed by dividing the sum of scores for each group by the number of scores in the respective series.

The sums of *scores, squares, and products*, respectively, for the total sample are obtained by summation of values for the groups which compose the total sample. For instance, the sum of all initial scores, $\sum X_t$, is equal to the sum of initial scores for male plus the sum of initial scores for female respondents. The *mean for the total sample* must again be computed by dividing the sum of all scores involved in the proposed mean by their number.

From these data the *sums of squares and products* (i.e., sums of squared deviations of scores from their respective means, and sums of products of paired deviations) may be computed by use of equations found in sections 11 to 19. The number of degrees of freedom is equal to the number of observa-

⁴ On some occasions it is of interest to compute the standard error of estimate for the groups and the sample. Since

$$\sigma_{y_e} = \sqrt{\frac{\sum (Y - Y')^2}{N}}$$

by substitution from the equation given above,

$$\sigma_{y_e} = \sqrt{\frac{\sum y^2 - \frac{(\sum xy)^2}{\sum x^2}}{N}}$$

Thus the standard error of estimate for the total sample, for instance, may be readily obtained by dividing the total sum of squares for errors of estimate by the total number of cases in the sample.

tions in the series less one, or, in the case of more than one series, the sum of the number in each less one for each series included in the total ($n - 1$ or, in the case of more than one group $[n_1 - 1] + [n_2 - 1] + \dots [n_r - 1]$).

The *Errors of Estimate* are derived as shown in section 20 and 21. It should be noted that the residual difference of "total" sum of squares less the "within" groups sum of squares is divided by its degrees of freedom to obtain the *numerator for the F ratio*. The *denominator of the F ratio* in turn consists of the mean "within" errors of estimate obtained by dividing the "within" groups errors by the sum of their several degrees of freedom less one which is allowed because of application of regression techniques inherent in the computations at this level.

The interpretation of *F* is generally accomplished by referring to *Distribution of F tables* such as may be found in Snedecor.⁷ As an *F*, or coefficient of covariance, of less than 1.00 is considered statistically non-significant at either the 1 or 5 per cent level, the tables are not consulted when *F* is less than one. As *F* in this example is .652, the conclusion is necessarily that this data does not warrant the generalization: sex is an important factor in determining the reaction of a group of individuals to the given stimulus.⁸

Had the value of *F* been greater than one, its significance could have been determined by entering an *F* distribution table in the column for one degree of freedom (i.e., degrees of freedom for greater mean square) and dropping down to the row for seven degrees of freedom (that for the smaller mean square).⁹ When this is done, it is discovered that with the above degrees of freedom, an

⁷ G. W. Snedecor, *Statistical Methods*, Ames, Iowa: Collegiate Press, Inc., of Iowa State College, 1938, pp. 174-177.

⁸ The change in attitudes toward this statement for the total population was statistically highly significant.

⁹ An *F* value greater than one would only occur if the relative magnitude of variances in this case reversed itself. Therefore, the presently smaller variance would become the larger when *F* grows in value to exceed 1.00.

F value of at least 5.59 would be required to be statistically significant at the 5 per cent level and 12.25 to be so at the 1 per cent level.

IV. A VARIATION ON THE COMMON DESIGN OF EXPERIMENT UTILIZING ANALYSIS OF COVARIANCE

It has been assumed that analysis of covariance demands the purely random assignment of members of a sample to two or more experimental groups. If such were the case, analysis of covariance could be applied in the social sciences only to data gathered from situations where individuals had been divided purely at random into two matched groups, with each group assigned to a different experiential situation. But most social science research does not lend itself to tests involving randomly assigned groups of *individuals*. The writer proposes that analysis of covariance may be used with equal validity in the testing of a greatly expanded number of hypotheses relating to human social behavior by considering *units of experience*, rather than individuals, as the cases to which the data pertain. If we think of units of experience, rather than individual persons, as composing our sample, it becomes necessary only to distribute these experiences at random among the two or more groups of individuals to be compared. In doing so, the groups of individuals to be compared can be purposively selected on some predetermined basis such as sex, income level, political affiliation, educational level, or age, rather than assigned at random. Then randomness of exposure of group members to the stimuli, except as the basis for group selection would have operated towards differential exposure, only as required.

In this design, covariance is used to determine the relationship between two quantitative variables while holding constant a qualitative variable. In the common usage, the degree of relationship between a qualitative and quantitative variable has been measured while holding constant another quantitative variable.

V. AN EXAMPLE

The following example will serve (1) to show how the above suggested design of covariance was applied in the analysis of social data, and (2) how it contributed to the testing of a hypothesis.

It was during the week before Easter, 1949, that an adult population sample in Pullman, Washington, had been asked to respond to the statement, "The service of the police department is very good," by checking one of five alternatives. On Easter Sunday, the college town of 7,500 people was shocked by the fatal shooting of three local law enforcement officers and a taxi driver by one of its well-known businessmen before he himself was killed by posse's bullets in full view of hundreds of the city's residents. During the week following the incident, the same sample of individuals was repolled on the statement.

The hypothesis to be tested was: THE SHOOTING INCIDENT AFFECTED MALE ATTITUDES TOWARDS THE POLICE DEPARTMENT DIFFERENTLY THAN FEMALE ATTITUDES. To test the hypothesis, the following numerical values were assigned to the responses: *strongly agree*—1, *agree*—2, *undecided*—3, *disagree*—4, and *strongly disagree*—5. The before and after means for male respondents were 3.10 and 3.48, respectively; for female respondents 2.62 and 3.58, respectively. When the critical ratios of differences between these means were presented, as shown in Figure 2, to a group of statisticians in the agricultural and social sciences, they interpreted the data as meaning that there was a significant difference in male and female shifts, as the hypothesis assumes. Their reasoning followed this pattern: The difference between male "before" and "after" means ($C.R. = 1.49$) was not significant even at the 5 per cent level. The difference between female "before" and "after" responses was statistically highly significant ($C.R. = 6.49$) and therefore there was most likely a significant difference between the effect of the incident on males and females,

with the females showing a significantly greater tendency to shift.

When analysis of covariance was applied, an F ratio of 1.24 resulted—a ratio far below the 3.94 shown by an F table as necessary for significance at the 5 per cent level. The hypothetical assumption that there was a significant difference in the shifts was therefore disproved.

Clearly, in view of the low coefficient of covariance, there is no statistically signifi-

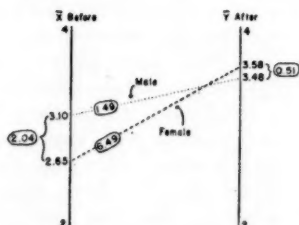


FIG. 2. Before-After Attitudinal Shifts by Sex

Statisticians, shown this chart, concluded that there was a significant difference between the shifts of the two groups. Covariance proves this conclusion incorrect.

cant difference between the shift in attitudes of men and women. The critical ratios merely measure differences between two means, not between two pairs of means. The test of statistical significance must here measure the significance of the *difference in slope* of the regression lines between the male "before" to "after" responses and female "before" to "after" responses.

VI. CONCLUSION

The utility of covariance lies in its ability to substitute for matching techniques. It permits stringent statistical analysis of data consisting of a limited number of observations without the devastating effect of sample shrinkage resulting in the application of commonly used matching techniques. In the case of larger samples, its statistical simplicity offers economies in labor and decreases chances for mathematical errors.

CULTURAL ASPECTS OF PUERTO RICO'S RACE PROBLEM

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THE 400-year record of race relations in Puerto Rico does not show the interracial violence often evident in other cultures. Puerto Ricans themselves frequently state, "We have no race prejudice here." For some, this assertion has become a protective device; it is intended to divert attention from what many believe "causes" race prejudice: the "Negro blood" they or fellow Puerto Ricans may possess. Others equate race violence with race prejudice; finding the first absent, they may claim the second absent also. We have shown elsewhere, however, that race prejudice in Puerto Rico is widespread.¹ In the present report, we will consider this prejudice as conditioned by the specific Puerto Rican cultural heritage. We will also examine new and external factors which have contributed to, and altered, Puerto Rico's prejudice pattern.

Although relatively few Americans² are familiar with either Puerto Rico or its race problems, the Puerto Rican has ample knowledge of race discrimination in the United States. Many Americans who come to Puerto Rico demonstrate behavior towards the islander which he correctly identifies as prejudicial. Puerto Ricans who live in or have visited the U.S. often experience race discrimination directly. They also experience it in other U.S. possessions in the Caribbean to which many have emigrated in recent times.³ A. A. Campbell states in his study of St. Thomas (one of the U.S. Virgin Islands):

There is little doubt that the advent of American rule has made St. Thomas a great deal

more aware of the importance of race as a basis for invidious distinction.⁴

Moreover, the entire Caribbean is well acquainted with the U.S. "gold and silver" race discrimination practices in Panama.⁵ The Puerto Rican contrasts the overt and belligerent race antagonisms of the continent with the island pattern "he knows and understands." In the first he finds great prejudice—in the second little or none.

Some Puerto Ricans and Americans have recognized additional and distinct patterns of race and color discrimination among Puerto Ricans themselves. These patterns are not always obvious. Among other observers, Paul Blanchard sees only American prejudice against Puerto Ricans:

In general, white Puerto Ricans do not draw a color line against darker Puerto Ricans, and when continental Americans draw this line, it creates great emotional antagonism to American control.⁶

We maintain, however, that no Puerto Rican is unaware of his position in the Puerto Rican society as determined by the color of his skin. Color is not the only physical characteristic which subjects him to discrimination. Many Puerto Ricans fear their fellows will see in them other racial traits associated with Negroes. This has found expression in the island phrase, "*No tengo dinga ni mandinga*."⁷ Caste status for

¹"St. Thomas Negroes—A Study of Personality and Culture," *Psychological Monographs*, Vol. 55, No. 5, 1943, p. 33.

²Paul Blanchard, *Democracy and Empire in the Caribbean*, 1947, p. 238.

³*Ibid.*, p. 218.

⁴*Dinga* and *mandinga* are terms for certain arbitrary groupings of Negro slaves in Puerto Rican colonial times. At dances or other social gatherings, slaves were separated into two groups, those in one wearing white stripes painted on the left cheek, the others on the right. Since either term referred to Negroes, today Puerto Ricans deny race mixture by

¹"Race Patterns and Prejudice in Puerto Rico," *American Sociological Review*, 14 (April, 1949), 294.

²Puerto Ricans have been U.S. (American) citizens since 1917; however, in Puerto Rico the term "American" refers to citizens of the continental United States. We use this designation throughout the present report.

³Cf. Clarence Senior, *Puerto Rican Emigration*, 1947.

Negro and white in Puerto Rico is based upon the same factors Dollard cites for Negro and white in the United States:

American caste is pinned not to cultural but to biological features—to color, features, hair form, and the like. This badge is categorical regardless of the social value of the individual.⁸

We are not interested here in distinguishing between *color* and *race* as separate anthropological categories or as arbitrary social definitions.⁹ In this report, we use color as a criterion of race—and of discrimination; in so doing, we do not depart from the general practice in the island.

Although race prejudice among Puerto Ricans is often ascribed to attitudes brought in and developed since the American Occupation,¹⁰ Puerto Rico has its own history of slavery, discrimination, and prejudice. Not the least of these is the famous *Código Negro* (Black Law), instituted in 1848 by the Spanish Governor-General of Puerto Rico, Juan Prim. This code placed all Negroes, slave or free, under military jurisdiction. It further empowered slave-owners to punish or kill Negroes without retribution.¹¹ This proved an extreme measure and was substantially modified by Prim's successor, General Don Juan Pezuela Cevallos. Ac-

cording to the Puerto Rican author Barbosa,¹² Pezuela himself used violence against Puerto Rican Negroes. Tomás Blanco, in *Prontuario Histórico de Puerto Rico*,¹³ states that Puerto Rican Negro slaves lived under conditions less deplorable than those prevailing elsewhere. However, other sources report that Puerto Rican slaves were branded (with *el carimbo*, the mark of slaves) beaten, burned, ravished, hung, shot, or had their hands, arms, ears, or legs cut off, depending upon the offense and the punisher.¹⁴

We do not wish to indict Spanish colonial policy. The exploitation of both Negroes and Indians by British, Dutch, French, and Portuguese colonizers has been described in recent works by Williams,¹⁵ Tannenbaum,¹⁶ and Freyre,¹⁷ among others. A particularly vivid eyewitness account of British and Dutch "atrocities" can be found in the writings of George Pinckard.¹⁸ Moreover, present consensus on New World slave policy among historians of the colonial period is represented by this statement: "... the Spanish laws were notoriously more lenient to the slave than the Anglo-Saxon laws..."¹⁹ Although a comparison of English and Spanish colonial legislation cannot adequately be developed here, this topic has special significance for us because of subsequent derived beliefs: (1) that Latin Americans have been historically more liberal than "Anglo-Saxons" towards Negroes; (2) that liberal "Latin" attitudes

saying, "I am neither Dinga nor Mandinga" (neither one nor the other), or "*No tengo raya*," i.e., "I have no stripe." This phrase has been made famous in Puerto Rico by Fortunato Vizcarrondo in his song, "*Y tu Agüela, e 'onno ejá?*" in *Dinga y Mandinga*, *Poemas*, 1942.

⁸ John Dollard, *Caste and Class in a Southern Town*, 1949, p. 64.

⁹ Gunnar Myrdal, in *An American Dilemma*, 1945, p. 115, discusses the difficulties of arriving at an accurate definition of "The Negro Race." He states also: "The social definition and not the biological facts actually determines the status of an individual and his place in interracial relations." We admit that the social definition of race does not correspond to the "scientific" or biological one. But to say that the social definition is not biologically accurate does not rule out *color* (or any other physical trait) as a significant element of the social definition.

¹⁰ Spain ceded Puerto Rico to the United States by the Treaty of Paris in 1898 at the end of the Spanish-American War.

¹¹ María Cadilla de Martínez, *Rememorando el Pasado Heroico*, 1946, p. 322; also, P. G. Miller, *Historia de Puerto Rico*, 1939, p. 293.

¹² José Celso Barbosa, *Problema de Razas*, 1937, p. 33.

¹³ 1943, p. 87.

¹⁴ Cf. Fray Iñigo Abbad y Lasierra, Cayetano Coll y Toste, Salvador Brau, María Cadilla de Martínez, José Colombaro Rosario and Justina Carrión.

¹⁵ Eric Williams, *Capitalism and Slavery*, 1944.

¹⁶ Frank Tannenbaum, *Slave and Citizen: The Negro in the Americas*, 1947.

¹⁷ Gilberto Freyre, *Casa-Grande & Senzala*, 1943; translated under the title, *The Masters and the Slaves*, 1946.

¹⁸ *Notes on the West Indies*, 2 volumes, 1816.

¹⁹ Raymond E. Crist and Carlos Chardón, "Intercultural Colonial Policies in the Americas: Iberians and Britons in the New World," *American Journal of Economics and Sociology*, Vol. 6, No. 3, 1947, p. 379.

towards Negroes were brought to the New World at the time of colonization, and hence, (3) that Latin Americans are today liberal toward Negroes, i.e., *do not have race prejudice*. We do not contest the claim for greater liberality in the Spanish colonial laws *as written*,²⁰ but we do not think any colonization program *in practice*, whether recent or early, has been marked by "notorious leniency" on matters of race. *Despite* liberal laws, certain cultural attitudes brought from the Old World and conditioned by the colonial environment produced identifiable prejudice patterns in Puerto Rico. We can demonstrate an outgrowth of these earlier prejudices as shown against present-day Spanish (non-Negro) immigrants to the island. Of the latter, the Puerto Rican sometimes says: "*Ese viene en espargatas, y se ha hecho rico*," i.e., "He comes to Puerto Rico poor (in shoes of fiber: *espargatas*), and becomes rich" (thinks he is better than we are). This pattern is similar to that prevailing between the European Spaniard and the *Criollo* of colonial times. Fisher states:

Although the Europeans married into colonial society and became wealthy, the remembrance of their former miserable condition was a sore spot concerning which their enemies made much sport. In Mexico, they were called *gachupines* as a term of derision because of their pointed shoes, and in South America they were nicknamed *chapetones*.²¹

But the *Criollo* (American-born Spaniard) was usually regarded as *mestizo* or *mulatto* by the continental Spaniard, whose social position and "racial purity" the Creole

struggled to attain. In his recent work, *The Fall of the Spanish American Empire*,²² Salvador Madariaga quotes earlier Spanish observers on the caste-class-color distinctions in colonial Spanish America:

In point of wealth, the American Spaniard could nearly always look down upon the newcomers from Spain—since wealthy Spaniards seldom emigrated. In point of colour he could not; for, as we know, there never was complete certainty as to the whiteness of an American-Spanish family. . . .

In his preceding volume, *The Rise of the Spanish American Empire*,²³ Madariaga states:

The palette of colours passed imperceptibly from ivory to copper and to ebony, and the line was always difficult to draw. . . . Manual work of certain kinds, such as the less skilled labour, was often taboo for the white. . . . Colour-class became thus to a certain extent entangled with labour-class. The chief promoters of this difference were the Creoles, for motives of power and prestige.

Today in Puerto Rico, social clubs which permit wealthy Spanish immigrant and upper-class Puerto Rican (white or light mulatto) exclude the Puerto Rican Negro and the *Jibaro*, Puerto Rico's "common working man." George D. Flinter, writing of Puerto Rico in 1834 states:

To be white is a species of title of nobility in a country where the slaves and people of colour form the lower ranks of society, and where every grade of colour, ascending from the jet-black negro to the pure white, carries with it a certain feeling of superiority.²⁴

Flinter's comment refers to the "Grandee-Hidalgo-Caballero" caste-class designations of Old Spanish culture; transported to the New World, they became terms identified

²⁰ Especially the *New Laws of 1542*; however, W. H. Dusenberry has analyzed the "Discriminatory Aspects of the Legislation in Colonial Mexico," *Journal of Negro History*, Vol. XXXIII, No. 3, July, 1948. He states: ". . . much of the legislation examined for this study was applied uniformly throughout the West Indies." Frank Tannenbaum describes differences in the Spanish and English slavery institutions in "The Destiny of the Negro in the Western Hemisphere," *Political Science Quarterly*, Vol. LXI, No. 1, March, 1946.

²¹ Lillian Estelle Fisher, "Viceregal Administration in the Spanish-American Colonies," *University of California Publications in History*, Vol. 15, 1926, p. 307; cf. also Philip Ainsworth Means, *The Spanish Main*, 1935, p. 61.

²² 1948, pp. 40-41; later, p. 127, Madariaga says, "But . . . the Creole, from nearly white to nearly black, sought in the name Spaniard a guarantee of white blood. Not till now can we gauge in all their depth the motives which for three centuries gave such an anomalous meaning to the word 'Spaniard' in the Indies."

²³ 1947, p. 240.

²⁴ *The Present State of Puerto Rico*, p. 232.

with *purity of blood*.²⁵ We can but wonder then, when he comments later in the same work:

I aver, that Cuba and Puerto Rico are the colonies which have least danger to apprehend from a servile war, or a war of caste and colour, should such unhappily ever arise in the West Indies.²⁶

Puerto Rican folklore speaks more knowingly on this topic:

*En estos tiempos el negro quiere ser blanco, y el mulato caballero.*²⁷

Even more widespread was the phrase: "*Todo blanco es caballero*" (Every white man is a gentleman).²⁸ Spain itself has had a long history of interracial contacts, and it is true, as Crist and Chardón point out (*op cit.*, p. 373), that the Spanish colonizer "... had been conditioned by his long association with the Moor" (to liberal attitudes on race). However, no colonial Spaniard pointed with pride to any slave or Negro ancestry, although, as Bourne states, "Slavery, of white men (Jews and Moors) as well as Negroes, was an established institution in Spain at the end of the fourteenth century."²⁹ Maurice R. Davie explains in his recent work, *Negroes in American Society*, that "... slavery (in the Iberian Peninsula) was in effect a contractual arrangement between the master and his bondsman. It had nothing to do with color or race."³⁰ But in

the New World, it was the Indian, and especially the Negro, who became increasingly identified with the low social status of slavery, particularly by status-seeking whites or persons of mixed blood. Patents denoting "*limpieza de sangre*" (pure blood) were sometimes officially conferred upon socially ambitious mestizos by the Spanish crown.³¹ Moreover, present cultural ties with Spain may not be ignored in the total explanation of race discrimination in Puerto Rico today. As Vincenzo Petrucci says, "In recent years, purity of race has been preached by followers of Spain's Franco, and there are those in Puerto Rico who have been impressed by it."³²

We have developed these points at some length because contradictions among them obscure basic explanations for a real and functioning race-tolerance in Latin America: the "tolerance" accompanying interracial marriages. In Puerto Rico, mixed marriages are sometimes cited as evidence of race tolerance, and ascribed to the old "liberal" Spanish tradition. But a basic contradiction is often here manifested in attitudes of the present-day white Puerto Rican. On the one hand he claims tolerance, historically, for interracial marriages; on the other, he denies any part in the process. We know, however, that interracial union is also an expression of relaxed sexual mores when "conquering" and "conquered" races are in contact. Then the "conqueror" has priority rights over those he dominates (and is therefore "superior" to) *regardless of color*. This fact is certainly demonstrated during the centuries of slavery in the Western Hemisphere. Here, as elsewhere, biological reproductive needs do not vary among races or because races are in contact. Rather, rules governing marriage and mating are eliminated or adapted to existing conditions. E. Franklin Frazier has recently elaborated and clarified this in *The Negro in the United States*,³³ as has Simey for British Caribbean areas.³⁴

²⁵ These terms become even more meaningful as symbols of caste when it is realized that "*hidalgo*" is a contraction of the Spanish "*hijo de algo*": son of somebody (of importance), and that *caballero*, common in origin to the English "cavalier," signifies that class of gentlemen owning horses (a symbol of wealth), as distinguished from the propertyless foot-peasant. The Spanish *Grandee* has a counterpart in the *Grand Lords and Dames* of English-speaking countries.

²⁶ *Op. cit.*, p. 212; italics ours.

²⁷ "Now the Negro wants to be white, and the mulatto to be a gentleman"; quoted by J. Colombian Rosario y Justina Carrión in *El Negro*, 1940, p. 126.

²⁸ Cf. J. Fred Rippy, *Historical Evolution of Hispanic America*, 1944, p. 109.

²⁹ Edward G. Bourne, *Spain in America*, 1904, p. 270.

³⁰ 1949, p. 9.

³¹ J. Fred Rippy, *op. cit.*, p. 109.

³² *Puerto Rican Paradox*, 1947, p. 21.

³³ 1949, p. 13 *et seq.*

³⁴ T. S. Simey, *Welfare and Planning in the West Indies*, 1946, especially pp. 15, 16, 42-43, 78-79.

In Puerto Rican colonial times, family structure (its racial components) and sexual mores were regulated by two major factors: (1) the absence of Spanish female (white) mates for the Spanish colonial soldiers, and (2), the need later to increase the number of slave-workers as the Indian population declined.³⁵ This decline, rather than feelings of tolerance, brought about the importation of Negro slaves, and promoted union among not two, but three different racial stocks.³⁶ This more accurately accounts for interracial marriages, we feel, than does (in Puerto Rico) the "traditional Spanish liberality." It further recognizes the basic facts that (1) different cultural conditions determine different family patterning, and (2) that family ties, regardless of race, are more elemental and enduring than those of any other human grouping. Since mixed marriages can be shown to be a function of biological and cultural (i.e., institutional, economic, geo-political, traditional) factors, we see they do not result from "liberal attitudes." But interracial marriages *give rise* to liberal attitudes, and enforce them with the strength of family ties. We further see that liberality and prejudice can exist simultaneously in the same culture (and within the same family)—a factor frequently ignored by the extremist on racial views. In the literature of Puerto Rico as interpreted by Ana Margarita Silva,³⁷ and in other studies of island conditions,³⁸ we

³⁵ Bourne, *op. cit.*, p. 270; Means, *op. cit.*, p. 29; also, R. A. van Middledyk, *The History of Puerto Rico*, 1903. While not always reliable for accurate data, Middledyk cites here a communication from the *crown officers* in Puerto Rico to the Spanish King, February 26, 1534, stating, "The Island is becoming depopulated, the gold is diminishing, the Indians are gone."

³⁶ Rippy, *op. cit.*, p. 110 states, "... there were fewer than 800,000 (Negroes) in the (Spanish) colonies at the close of the eighteenth century. More than half of these were in Cuba and Puerto Rico."

³⁷ *El Jibaro en la Literatura de Puerto Rico*, 1945, especially p. 24.

³⁸ Cf. Pablo Morales Otero, *Nuestros Problemas*, 1945; Insular Board for Vocational Education, *Socio-Economic Conditions in Puerto Rico Affecting Family Life*, 1945; José Celso Barbosa, *op. cit.*

find a recognition of the strength of family ties *transcending race*. But there is a denial—or no consideration given—to influences of culturally-prescribed race stigmas upon them.

The factors described above do not comprise Puerto Rico's total cultural experiences in matters of race. New influences promoting race friction have developed.³⁹ Others constrained by the colonial setting have reappeared in modified form. Moreover, despite early Spanish influences on discriminatory practices in Puerto Rico, there is no denying the effect of racial biases brought in from the United States. Let us here examine some of these in relation to race discrimination in Puerto Rico.

Among the attitudes which many Americans bring to Puerto Rico, their feeling of "superiority" is most objectionable to the islander. It is demonstrated in many ways to the Puerto Rican. Residential areas referred to by both American and Puerto Rican as "American colonies" (and from which many Puerto Ricans are socially excluded) have developed in various island cities. They are usually associated with U.S. business or research establishments. Some years ago the "Loiza Street Colony" in Santurce was one of the most famous. Current reports by Weaver,⁴⁰ and Begeman,⁴¹ have shown that true "proportional representation" of Negroes in the continental Armed Forces has not been achieved, and that segregation of Negroes is widespread in U.S. residential areas. Such practices if enforced in Puerto Rico by Americans have added significance, since the proportion of

³⁹ Puerto Rico's newspaper, *El Mundo* reports (September 20, 1949, p. 4) that two clubs in San Juan had refused admission to an American Negro employed by the University of Puerto Rico, and to others in his company. The *Chicago Sun-Times* reports (October 27, 1949, p. 32) that a U.S. military college would receive a 50 million dollar grant if it would teach "... states' rights and superiority of the Anglo-Saxon and Latin-American races" (italics ours). Subsequent issues report this offer rejected.

⁴⁰ Robert C. Weaver, *The Negro Ghetto*, 1948; cf. also, National Committee on Segregation in the Nation's Capital, *Segregation in Washington*, 1948.

⁴¹ Jean Begeman, "A Military Bill of Rights," *New Republic*, August 8, 1949, p. 10.

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Negro to white in the island is considerably greater than on the continent.⁴² In World War II, mass segregation of Puerto Rican from American in army camps in Puerto Rico was notorious. The U. S. Navy which maintained (and still keeps) important naval bases on the island enlisted no Puerto Ricans in Puerto Rico for naval services.⁴³ Rexford G. Tugwell, war-time Governor of Puerto Rico, comments as follows on this situation:

The Navy still would not take them (Puerto Ricans). But the Army was, somewhat reluctantly, shaping a different policy. It would be foolish to contend that there was not a prejudice in the Army against Puerto Ricans. The Continental officers, of course, maintained that it was an attitude based on facts. The facts cited were that Puerto Ricans were largely *not only illiterate but natively unintelligent*; and that the educated among them made poor officers because they would not lead instead of drive. On the whole the Army was against Puerto Rican recruitment, except for a limited service, and it was intended to confine this service to garrison duty at inactive posts.⁴⁴

This statement bears a marked resemblance to the following:

The over-all preference of the Army has been that there should be no Negroes in it at all, but since this preference must be qualified by need, Negroes are to be used only when they are required by manpower shortages and by public pressures.⁴⁵

We may safely conclude that in this respect the U. S. Armed Forces' policy towards Puerto Ricans (even the 76.5% white) differed in no significant way from its policy towards Negroes.

The United States has long recognized the importance of the island for military purposes;⁴⁶ Puerto Ricans are justly conscious

of this, and of their contribution in manpower to the allied war effort.⁴⁷ Whatever may have been or still is the desire of individual Puerto Ricans for independence from the U.S., in the early stages of the last war Puerto Rico publicly allied itself with the "forces of democracy."⁴⁸ It has on numerous occasions asserted its belief in democratic goals.⁴⁹ We need hardly add here that Puerto Rican sons lost in war were as deeply mourned as were sons of other families so deprived. This is vividly illustrated in an account of the war services and death of First Lieutenant Esteban Terrats.⁵⁰ We need not wonder at the Puerto Rican's resentment—as citizens and soldiers of the United States—to discriminatory treatment at the hands of the U. S. Armed Forces.

We turn now to a consideration of the Negro in the Puerto Rican cultural setting. Although on census records the Negro represents "almost 25% of the island population," the verbal emphasis in Puerto Rico is that "over 75% of the Puerto Rican population is white." As we have shown elsewhere,⁵¹ these figures are subject to modification since the mulatto element is not identified, and therefore weights the "white" and "Negro" categories. There is considerable evidence, historically, that "Interbreeding . . . had taken place on a large scale."⁵² Over

Rico en la Guerra, 1945, ibid.; Armed Forces Talk 204 (no date), Troop Information Branch, U.S. Army.

⁴² More than 75,000 Puerto Ricans served in World War II (cf. references above).

⁴³ Luis Muñoz-Marín, *Puerto Rico in the Area of Democracy*, May, 1941.

⁴⁴ Cf., for example, Jaime Benítez, *Education and Democracy in Puerto Rico*, 1947.

⁴⁵ Orama Padilla, *Los Que No Regresaron*, 1946; the most recent and complete account of Puerto Rico's services in World Wars I and II appears in María Cadilla de Martínez' *Rememorando el Pasado Heroico*, 1946, pp. 640-661.

⁴⁶ M. W. Gordon, *op. cit.*, p. 298.

⁴⁷ Eric Williams, "Race Relations in Puerto Rico and the Virgin Islands," *Foreign Affairs*, January, 1945, p. 312; cf. also, Cayetano Coll y Toste, *Boletín Histórico de Puerto Rico*, Vol. 12, pp. 2-4. Numerous references to race mixture in early colonial times have recently been made available in Charles Upson Clark's translation of *Compendio, y Descripción de las Indias Occidentales*, by Fray An-

⁴² 1940 census: Puerto Rican Negroes represent 23.5% of the island population; U.S. Negroes, 9.8% of the continental.

⁴³ Some Puerto Ricans born or residing on the U.S. continent were accepted for naval services.

⁴⁴ *The Stricken Land*, 1947, p. 365; italics ours.

⁴⁵ L. D. Reddick, "The Negro Policy of the United States Army, 1775-1945," *Journal of Negro History*, Vol. XXIV, No. 1, 1949, p. 11.

⁴⁶ Cf. *Puerto Rico: The Story of a Warbase*, 1943, Office of Information for Puerto Rico; Puerto

thirty years ago, Franz Boas, noted anthropologist, wrote:

The population of Porto Rico is derived from three distinct sources—from people belonging to the Mediterranean type of Europe, from West Indian aborigines, and from Negroes.⁵³

It becomes increasingly difficult to insist upon a direct and unchanged racial identity with former Spanish ancestors, as do many race-conscious Puerto Ricans today. Some islanders have publicly discussed the topic of race mixture. In *Insularismo*,⁵⁴ Antonio S. Pedreira says (our translation):

We must keep in mind that a great per cent of the Puerto Rican population is not separated into visible racial types, but is so blended and fused that the point of departure is almost erased—(resulting in) a "No man's land" in our social life . . . and an unsuspected civil-biological war.

However unstable his social position may be, the Puerto Rican Negro is an established participant in, and contributor to, the intimate cultural life of the island. *Diplo* (abbreviated form of *Diplomat*), a Negro character, appears daily as a comic in the Puerto Rican newspaper, *El Mundo*.⁵⁵ Here he is made a scapegoat, and like the underdog of all cultures, frequently wins out by exercising his wits. We note also the island folk-fable of the Negro who steals away little children,⁵⁶ a story similar to the "boogy man" tales on the U.S. continent. No major studies have been made of African cultural

survivals in Puerto Rico;⁵⁷ but there is reason to suspect that certain *hechizos* (witchcraft) practiced by "some of the lower-class peoples and *spiritistas*" resemble recognized African traits in other Caribbean areas.⁵⁸ Citizens of Guayama, a southern coastal town of Puerto Rico, are nicknamed *Los Brujos* (the sorcerers, wizards); Guayama has a high percentage of Negroes in its population, exceeded only by that of six other, smaller, island towns.⁵⁹ Renzo Sereno has suspected the existence of an intimate language containing speech forms or references of possible African derivation.⁶⁰ Aurelio M. Espinosa, well-known scholar of Spanish folklore, speaks as follows regarding certain Puerto Rican *décimas* (verses of 10 lines) recorded in Puerto Rican Negro dialect: "Many of the vocables are unknown to me."⁶¹ Other references to African speech forms can be found in the island's folklore.⁶² María Cadilla de Martínez states that both the Puerto Rican Negro and the Puerto Rican peasant (the *jibaro*) use the aspirated *h*, and convert the *f* into *j*, ". . . as was the custom in Spain before the 16th century."⁶³ This is a problem to challenge both the linguist and etymologist. Dances, rhythms, and songs, such as the *Candunga* and *Guateque*, and other dialect forms of probable African origin are also reported by this author. Certain African cultural forms are recorded in island history. In the latter 16th century, Bishop Nicolás

tonio Vázquez de Espinosa, Smithsonian Miscellaneous Collections, Vol. 102, 1942. Cf., for example, pp. 47, 240, 376, 734, etc.; the *Compendio* ". . . was written in 1628 and corrected in 1629; Vázquez received his permission to print November 12, 1629."

⁵⁴ "New Evidence in Regard to the Instability of Human Types," *Proceedings of the National Academy of Sciences*, Vol. 2, No. 11, p. 716; Boas claims the development of a new physical type, a Puerto Rican whose head-form is significantly different from that of any of his progenitors, and, ". . . due to . . . modification that occurred under the new environment."

⁵⁵ 1946, p. 27.

⁵⁶ Created by Enver Azizi; now written by José Luis Torregrosa.

⁵⁷ "Porto Rican Folk-lore," *Journal of American Folk-lore*, 1927, Vol. 40, No. 158, p. 410, *cuento* No. 39.

⁵⁸ Melville J. Herskovits, *The Myth of the Negro Past*, 1941, p. 331.

⁵⁹ According to Puerto Rican informants, these include fetiches, drugs and potions, magic incantations, and curses.

⁶⁰ (1940 census); cf. also a recent detailed study of Puerto Rico's Negro population-distribution by Wilbur Zelinsky: "The Negro Population Geography of Cuba and Puerto Rico," Part III of "The Historical Geography of the Negro Population of Latin America," *Journal of Negro History*, April, 1940, pp. 209-219.

⁶¹ "Cryptomelanism, A Study of Color Relations and Personal Insecurity in Puerto Rico," *Psychiatry*, August, 1947.

⁶² "Porto-Rican Folk-Lore," *Journal of American Folk-Lore*, 1918, Vol. 31, No. 121, p. 361.

⁶³ *Ibid.*, p. 294.

⁶⁴ *Hitos de la Raza*, 1945, p. 53.

de Ramos had some Negro slaves beaten for practicing African religious ceremonies in Puerto Rico. In spite of this, the ceremonies were repeated, and some of the same slaves were later punished for persisting in the practices.⁶⁴ Augusto Malaret traces the probable African origin of the *bomba*, a drum found in Puerto Rico and associated with "Negro dances."⁶⁵ Another smaller drum, the *bongó*, which Fernandez Ortiz says "is used by afrocubanos,"⁶⁶ is also found in Puerto Rico where it is played today to accompany informal dances.

The difficulties attending research in African cultural survivals in the Western Hemisphere have recently been pointed out by E. Franklin Frazier;⁶⁷ but we feel that Puerto Rico would be unique among other Caribbean islands if future research failed to reveal additional African cultural influences, however modified or diluted. Recent works such as Turner's⁶⁸ indicate still rich sources of New World Africanisms.

Place names and dates throughout Puerto Rico and its history give memorial tribute to the publicly-recognized achievements of Negro islanders.⁶⁹ This does not mean they

have attained any great social prestige. Terms such as "*grifo parajero*" and "*Tiene infulas de blanco o tiene infulas*" testify to the white Puerto Rican's resentment against either Negro or mulatto who "tries to get ahead."⁷⁰ Other terms, descriptive of racial characteristics and carrying a derogatory connotation are widespread throughout the island:

negro cocolí: a very dark Negro. "*Cocolí*" is derived from the name of a small crab, *cocolia*, common in Puerto Rico. Many are dark blue or dark gray in color, and are believed to "bite." Stories about *negro cocolí* are sometimes used to scare small children.

la bamba: thick or protruding lips.

nariz aplastá: flattened or wide nose.

la piel blanca y oscurina: a skin which is neither light nor dark (mixed in color).

la pasa dura: kinky hair; "*pasa*" is the Spanish word for raisin. *La pasa dura* is hair "kinky" like a raisin.

The Puerto Rican has been conscious not only of race-mixture but of *varieties* of race-mixture since early times. Terms such as *zambo*, *pelirrojo salta-atrás*, and *bozal* were used early in the island's history.⁷¹ Even then, island folklore summarized the Negro's status as follows: "*El negro es siempre negro, como el 28 colorao*."⁷² In *Ambar Mulato*,⁷³ we find eloquent evidence of the Puerto Rican mulatto's knowledge of his

⁶⁴ Cayetano Coll y Toste, *op. cit.*, Vol. 3, pp. 48-49.

⁶⁵ *Diccionario de Provincialismos de Puerto Rico*, 1917, p. 30; we were recently informed that the *bomba* is currently used in *Barrio Cubuy* and *Barrio Cangrejo*, two districts in Eastern Puerto Rico near San Juan. It is also played in Mayagüez, a city in western Puerto Rico.

⁶⁶ *Glosario de Afronegrismos*, 1924, p. 64; this source contains other African terms common to Cuba and Puerto Rico. Many Puerto Ricans ascribe these "Africanisms" to influences brought in from other Caribbean islands, and while much interchange did occur, there is a reluctance to accept any "Negro customs" as developed in Puerto Rico.

⁶⁷ *Op. cit.*, pp. 3-19.

⁶⁸ Lorenzo D. Turner, *Africanisms in the Gullah Dialect*, 1949.

⁶⁹ It is not commonly known in Puerto Rico that one of the most famous libraries of Negro literature, history, and art-prints has as its nucleus the original collection of Arthur Alfonso Schomburg, a Puerto Rican Negro. The library is now housed in the 135th Street branch of the New York Public Library, New York City; cf. "The Schomburg Collection of Negro Literature," Arna Bontemps, *The Library Quarterly*, Vol. XIV, No. 3, July, 1944.

⁷⁰ "*Grifo parajero*": proud or vain mulatto; "*Tiene infulas . . .*": He puts on airs of being white, but he has only the airs, i.e., he is not really white.

⁷¹ *Zambo*: (in Puerto Rico), offspring of a Spaniard and a Negro woman. Elsewhere in Latin America, the term means "born of an Indian and Negro." In current island usage it sometimes means *bow-legged*. *Pelirrojo salta-atrás*: "red hair jump back," i.e., offspring of a Spaniard and a "mixed white" woman (sometimes called *albina*), who was herself the daughter of a Spaniard and a Negro woman. *Bozal*: a Negro direct from Africa (without mixture).

⁷² "The Negro is always a Negro, as number 28 is always red" (on the roulette-wheels used for gaming in local island *fiestas*); the implication is that nothing can be done to change the innate and undesirable characteristics of the Negro.

⁷³ 1938; a book of verse by the Puerto Rican poet, Carmen María Colón Pellot; poems about the mulatto predominate.

social inferiority today. This theme is further amplified by Luis Palés Matos, well-known island poet, in *Tun Tun de Pasa y Grifería*.⁷⁴ We do not refer here to class and caste distinctions. We have in mind the designated position of inferiority which the Puerto Rican Negro or mulatto often occupies in his own opinion as well as in that of others. Simey speaks of this in another Caribbean area:

The primary cause of competitiveness amongst the masses is the feeling of inferiority which is the lot of the coloured man.⁷⁵

The Negro's position of inferiority in Puerto Rico is described by Serano:

To a non-Negro Puerto Rican, a Negro is a fellow human being with three drawbacks: first, he is the result of an illegitimate union; second, he is the descendent of slaves; and third, he is not presentable to North Americans.⁷⁶

These characterizations also apply in varying degrees to many, if not most, Puerto Rican mulattoes. In view of this and information previously presented here, we can hardly accept the following statement:

Color is not a vital issue in Puerto Rico, and the number of those with Negro blood is very much smaller than that in the other (Caribbean) dependencies. . . .⁷⁷

Puerto Rico is particularly conscious of its color-status in the Caribbean; it does not want to be identified with other islands of darker hue.

As elsewhere where extensive race-mixture exists, in Puerto Rico racial variation is not uncommon among brothers and sisters of the same parents—or between parents themselves. Not all family groups feel free to participate (as a unit) in color-conscious social functions; as the basic bio-social

grouping they are also subjected to interpersonal problems of considerable psychological significance. It seems likely to us that these insecurities, enforced on the intimate family level, have contributed to the unusually high suicide rate of the island. This rate is more than twice that of the United States, and one of the highest known.⁷⁸ It is not easy to admit (to one's self or to others) that color prejudice is possible from fellow family members, social pressures on race so requiring. Nevertheless, we have observed prestige-stratification by color in numerous Puerto Rican families. Rogler has identified it also.⁷⁹ Moreover, this form of prejudice is not uncommon elsewhere in the Caribbean:

In middle-class society in Trinidad . . . a dark-skinned brother in a fair-skinned family is sometimes subjected to insults, and fair-skinned girls who marry dark-skinned men are regarded as having married beneath them.⁸⁰

Although encouraged by some outside proponents (white) of "race equality," the Puerto Rican colored man often cannot, with impunity, fight against the "injustices" of the whites. This may require from him actions directed against "white" representatives of his own family in past generations—or of others in the present. The "white" Puerto Rican has a special way of meeting this problem. If he does not wish to aggress against Negro elements in his own family background, he either "hides them in the kitchen"⁸¹ or says, "we have no race prejudice here." Other defense-escape mechanisms are demonstrated by statements such as "Dark skin resists mosquito-bites better

⁷⁴ S. L. Descartes, *Basic Statistics on Puerto Rico*, 1946; this source gives comparative suicide rates per 100,000 population (1942) as: United States, 12.0; Puerto Rico, 25.4. Tugwell, *op. cit.*, p. 376, speaks of the high suicide rate among Puerto Rican soldiers in World War II.

⁷⁵ Charles Rogler, "The Morality of Race Mixing in Puerto Rico," *Social Forces*, October, 1946.

⁷⁶ Simey, *op. cit.*, p. 98.

⁷⁷ The implication is that family members with "dark skin" are hidden (in the kitchen), while light-skinned relatives are welcome in the living-room, i.e., in public. Cf. previously-cited song by Fortunato Vizcarrondo.

⁷⁸ 1937; according to Pedro Juan Labarthe in "Antología de Poetas Contemporáneos," 1946, Palés Matos is one of the best poets writing in the Spanish language, and the initiator and master of "Negro verse" in Latin America.

⁷⁹ *Op. cit.*, p. 106.

⁸⁰ *Op. cit.*, p. 263.

⁸¹ Annette Baker Fox, *Freedom and Welfare in the Caribbean*, 1949, p. 169.

than white," or, as island folklore has it, "*El negro siempre mete la pata.*"⁸² In Puerto Rico when the sun is hot, umbrellas are sometimes used to prevent additional "suntanning." Light or white face-powder may also be applied to reduce dark pigmentation. There are exceptions to these practices, and many Puerto Ricans do not resort to such devices. However, Rosario and Carrión have a further list of the islanders' responses to discrimination.⁸³ Added to those above, they illustrate widespread prejudice-combating techniques arising from a culture which defines the Negro as inferior (socially, morally, intellectually) to the white man. The Puerto Rican Negro or mulatto justly fears the prejudice of many *Americano* outsiders. But many Puerto Ricans deny him equally effectively (though less overtly), protected by the dogma, "We have no prejudice here."

We wish to stress again the overt racial bias and "superior attitude" of many Americans previously or at present in contact with Puerto Rico. There is some evidence of a "Southern patronage" in past U.S. dealings with the island when many administrative officials sent to Puerto Rico were from southern continental states.⁸⁴ We did not see signs of any organized policy in this direction at present, but some Americans now in Puerto Rico believe this policy desirable because "U.S. Southerners are experienced in dealing with colored people." We may be permitted to doubt that this "experience" would contribute to a favorable solution of Puerto Rico's race problems. On this Eric Williams comments as follows: "... the intrusion of new brands of race prejudice into the Caribbean will provoke serious social and political repercussions."⁸⁵

Puerto Rico has not completely integrated, culturally, "different" American race-values

⁸² "The Negro always sticks his foot in," i.e., is stupid and always makes mistakes. Here the white may defend his bias by pointing to the stupidity (inferiority) of the Negro.

⁸³ *Op. cit.*, pp. 127-128.

⁸⁴ During the 1930's, the Postmaster of San Juan, the U.S. Marshal in Puerto Rico, the Federal Judge, and the Governor of Puerto Rico were all from southern U.S. states.

⁸⁵ *The Negro in the Caribbean*, 1942, p. 69.

or many other American cultural elements (food habits, dress, language, technology) acquired through 50 years' contact with the United States.⁸⁶ Many Americans are ignorant of Puerto Rican customs and values which differ from their own—values which they neither understand nor respect. On his part, the Puerto Rican sometimes imagines insults where none is intended.⁸⁷ He often speaks disparagingly of the uncultured, money-conscious "way of life" of the *Americano*, whom he designates as "shameless," a term of more than average disrespect in island culture. We do not believe it necessary to be a Puerto Rican in order to understand the behavior which he, like other human beings, exhibits. But we believe a healthy respect for the importance of observable *cultural* (not personal or "racial") differences is not demonstrated on the part of many Americans who write prescriptions for Puerto Rican ills from their offices and class-rooms on the continent. Nor is it observable on the part of all working in the island. Failure to appreciate the cultural aspect of Puerto Rican-American contacts has contributed greatly to conflicts on a personal level.

We cite a further related failure of many Puerto Rican and American educators working with the island's school system: the failure to develop an educational program whose primary purpose is to meet the needs of the Puerto Rican cultural setting—certainly insofar as it fails to provide Puerto Ricans with formal scientific analysis of the island's race problems. Writing ten years

⁸⁶ Those interested in seeing, if only on a superficial and humorous level, some of the confusion of bi-cultural values may find it recorded in the following two songs: "*Un Jibaro en Nueva York*," Jesús Sánchez and Ladislao Martínez, Victor Record, No. 23-0707-A; "*Yo Estoy Aprendiendo Inglés*," Facundo Rivero (in two versions): Victor Record No. 23-0334-B, and Capitol Record, No. 307. Less humorous presentations of the bilingual problem can be found in any of the U.S. Congressional hearings on Puerto Rico's language bill; cf. also, Pedro A. Cebollero, *La Política Linguístico-Escolar de Puerto Rico*, 1945.

⁸⁷ Cf. E. B. Reuter, "Cultural Contacts in Puerto Rico," *American Journal of Sociology*, Vol. LII, No. 2, September, 1946.

ago, however, Rosario and Carrión asked that "... the problem of the Negro in Puerto Rico, hidden in a damp and unhygienic obscurity, be brought to the surface where the tropical sun and winds could do their healing and sanitary work."⁸⁸ Moreover, in a recent publication we read of "... Puerto Rico where education modeled on the United States schools is so alien to the experience of rural Puerto Ricans that most of them soon forget what little they have learned."⁸⁹ This subjects a great proportion of the islanders to the appellation "intellectually inferior" (more than 60% of Puerto Rico's population is "rural").

An equally significant difficulty in Puerto Rican-American relationships is derived from the premise that "Puerto Ricans do not really behave like other people." This may be taken as evidence of the greater failure to identify differences in behavior as conditioned by cultural rather than biological (i.e., "racial") factors. For those who cannot make this distinction, the inevitable conclusion follows: "Puerto Ricans are really inferior—just as I suspected." On this one writer comments currently as follows:

Scientific understanding of the behavior and attitudes of the world's peoples as they are con-

trolled by the various cultural systems in which they live should go far towards avoiding and eliminating inter-group conflicts of many kinds....⁹⁰

We have not seen specific, stated methods aimed at understanding of the above sort, even in recent social investigations projected in Puerto Rico.⁹¹ Moreover, our control of world-wide cultural conflict is so inadequate that we have been unable to provide against the costs of major wars. Under these conditions, many "cultural study" programs seem inappropriate. However much we might wish it, inter-cultural understanding does not come about *because* one group of people studies another group's culture. But Puerto Rican and American alike could profit, we feel, by techniques which concurrently analyze conflicting factors within their separate cultural backgrounds. Such orientation has been absent from most Puerto Rican-American cultural programs. It has been significantly lacking from considerations of Puerto Rico's race problem.

⁸⁸ John Gillin, "Methodological Problems in the Anthropological Study of Modern Cultures," *American Anthropologist*, Vol. 51, No. 3, July-September, 1949, p. 399; italics ours.

⁸⁹ Cf. "Notes and News," *American Journal of Sociology*, September, 1949, p. 196, for a summary of one current project; it is also reported in "Bulletin No. 3," *Inventory of Research in Racial and Cultural Relations*, March 31, 1949, p. 14.

URBAN SEGREGATION AND RACIAL LEGISLATION IN AFRICA¹

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URBAN segregation in the British and Belgian territories of Africa is dominated by an elaborate system of laws which give it a unique character, quite different from what obtains anywhere in the United States, and it may be of interest to see if such legislation provides a better answer to the problem of urban racial rela-

tions than the system of freedom which prevails in other countries. Big differences in this respect, as in many others, exist between West Africa and the rest of the continent. In the former a large degree of racial tolerance resulted from the trading operations which dominated the development of West African coastal towns so that segregation, when introduced by the British Government in the 1910's remained voluntary so far as the Europeans were concerned and many

¹ For a general bibliography, see J. L. L. Comhaire, *Urban Conditions in Africa* (Nuffield College Bibliographies, Oxford, 1947).

elected to stay in the native quarters. The story of Cape Town was in some respects the same as that of the West African ports, but in time the better climate there attracted to the hinterland white settlers whose appetite for land could not be satisfied without encroaching on native rights, and then, immediately, racial elements entered the problem. The sudden expansion of European sovereignty in all territories south of the Equator at the end of the nineteenth century, enabled settlers to merge their interest with those of European capitalists for the exploitation of local manpower. The result is that today, from Kenya and the Belgian Congo down to South Africa, many natives are working for the sake of some white employer, as rural and industrial laborers or as domestic servants. When towns grew up in the process of urbanization which necessarily accompanies modern technical development, they were European-made towns where the native had to be content with living in segregated locations.

This system of locations was not primarily the natural outgrowth of such policy of immediate and wholesale economic development. No systematic segregation was originally contemplated because Africans, at first, were not supposed to stay in towns at all, except as domestic servants living on their master's premises or as workmen kept in compounds for the duration of their contracts. The advent of petty traders, of women and children, and other people who apparently had come to stay, filled the white ruling class with dismay, and locations were not organized without reluctance. "Were it not for this case of the urbanized or de-tribalized natives," wrote General Smuts, "the color problem . . . would be shorn of most of its difficulties."²

Let us now consider the various systems of legislation maintained for the purpose of regulating urban segregation in the African territories and verify whether they help rather than prevent the advent of harmonious racial relationships.

Segregation in West Africa has rarely been

pressed by Government as a necessary element of public order. Europeans in the second decade of this century were advised, but not compelled, to live in their own quarters. This, unfortunately, was enough to put a heavy strain on race relations, and irreparable damage had already been done when the Ikoyi reservation in Lagos island, Nigeria, was opened to educated Africans in 1947.³ When legal segregation was abolished it became clear that the previous legislation had been as pointless as it was politically harmful: the African residents, indeed, who had fought for the recognition of their right to live where they wanted, declined to make use of their new opportunity to stay amongst Europeans. When I visited the place, one year later, I met only two Africans and they had been sent to live there by their employer, the Lagos Town Council.

Legal segregation, on the other hand, is the rule in most territories south of the Equator. The situation in Nairobi, Kenya, probably is as absurd as can be imagined. If the African population of 70,000 (50,000 permanent) really were confined to their small location, the Nairobi Municipality might well be sued for attempted genocide; but the fact is that nearly half of them are working for European and Indian employers and are housed by their masters, and nothing therefore remains of the medical and other factors previously put forward in support of the segregation policy.⁴ With regard to administration, there is an African Advisory Council helping the European officer in charge of the location, and the Council sends two representatives to the Municipal Authority, where they deal with the interests of all races.⁵ In Northern Rhodesia separate townships have been established for each race, with identical powers and institutions.⁶

² Nigeria, *Address of the Governor* (Legislative Council Debates, March 1948, Lagos, Nigeria).

³ Kenya, *Local Government Report*, Annual, Nairobi, Kenya.

⁴ Nairobi, *Municipal African Affairs Officer Report*, Annual, Nairobi. Full description of conditions and maps in L. W. T. White, L. Silberman, P. R. Anderson: *Nairobi-Master Plan for a Colonial Capital*, London, 1948.

⁵ Northern Rhodesia, *African Townships Regulations*, 1945, and *Government Notice*, 94/1945.

⁶ J. C. Smuts, *Africa and World Problems*, Oxford, 1930, p. 98.

There is, however, no provision in such a system for the solution of the common problems which inevitably arise in a single geographical unit. The ultimate aim is to admit Africans in mixed municipalities as in Kenya.

Legal segregation in Southern Rhodesia was introduced in the nineteenth century by the South Africa Company and developed after the grant of self-government to the territory in 1920. The European municipalities refused at first to erect permanent native locations, being afraid of the expenses and responsibilities involved in the creation of African urban settlements. In 1946 the Government made the erection of locations compulsory for the local authorities. It is characteristic of the new legislation that domestic servants were favored by the recognition of their right to accommodation on their employers' premises, while at the same time being made subject to conditions reminiscent of slavery. For example, special permits must be obtained for a wife and for every child the servant wants to keep with him. On account of this legislation the Southern Rhodesian Government has been accused of conducting a "herrenvolk" policy reminiscent of Nazi Germany.⁷ This is an exaggeration, as discrimination remains founded on cultural differences and mulattoes are exempt. The Southern Rhodesian policy with regard to Africans is to build up a new native society, kept in segregated areas but equal in rights to the European society, and managing its own self-contained townships. In case of failure of this scheme, there is a serious danger that the British majority will be unable to resist the predestination bogey pressed on them by South African residents, and white domination then will become the inevitable solution.

The South African system of urban native locations appears particularly elaborate, the

more so because its very existence is hardly consistent with the existing rule that all Africans are temporary residents in towns. European municipalities, under the Native (Urban Areas) Act, 1923, as amended, are entrusted with the administration of native communities, but they must follow the native policy set up by the Union Government itself.⁸ Any town proclaimed an urban area must erect a location and provide housing for its African inhabitants. A Native Advisory Board with a partly elected membership must be created in every location and the provisions for the preservation of African interests include that the Board must be consulted by the municipality on all regulations affecting the location, and that money raised within its area may not be used for the benefit of white residents. This measure, liberal as it is in appearance, brought hardships to the African population in many towns for it led, in fact, to a belief that the locations could and should be self-supporting. For instance, the Johannesburg Municipality had made good £302,012 of deficits in the locations between 1914 and 1937, then stopped all subsidies and raised the rents on houses, which are all municipal property, while beer brewing became a municipal monopoly in the hope of raising more funds for the administration of the location.⁹ The system, as it stands, does not satisfy the African population, and far-reaching results may be expected from the appearance in many towns of unofficial "vigilance associations" which sometimes raise their heads in the defense of native interests, as shown in their successful opposition to proposals made for a municipal

⁷ A. S. Welsh: *The Law relating to Natives in Urban Areas*, 2d Edition, Johannesburg, Non-European and Native Affairs Department, 1946.

The great authority on general conditions in South African towns is Ellen P. Hellmann, whose latest contribution to the subject appeared in *Handbook on Race Relations in South Africa*, 1949.

⁸ R. J. Randall: "Some Reflections on the Financial Policy of Certain Municipalities towards the Natives within their Boundaries," *South African Journal of Economics*, Cape Town, June 1939, pp. 149-171, discussed in September 1940 issue, p. 264 sq.

⁹ Anon, "Warning from Southern Rhodesia" (*Empire*, Fabian Colonial Bureau, London, March-April 1946, pp. 1-2). Less critical description: Anon, "Southern Rhodesia's New Bills" (*Journal of the Royal African Society*, London, April 1936, p. 213-214).

monopoly of beer-brewing at Cape Town.¹⁰

It should be noted that segregation as organized in the Union is not the result of spontaneous activities of local authorities all working towards the same end but of a uniform regime forced on the municipalities whether they want it or not.¹¹ Many towns, no doubt, would have adopted it without orders from above, but the result of Government interference in the matter is that the great centers, where liberal views sometimes prevail, have to follow a policy devised by and for the petty prejudices of small towns. More than one local authority has been more liberal than Government as long as it has been allowed to run its own affairs. It is an old story which might be carried as far back as the "pass laws" for native residents issued in 1888 and never applied in the Natal province of today's South Africa because the local corporations declined to issue the necessary by-laws.¹² The Cape Town and Elisabeth city councils especially, in later years, have been conspicuous for their resistance to discriminatory and disciplinary legislation.

An essential factor is that a definite racist philosophy supports the organized segregation policy of the Union. The racial laws in force in South Africa are not much stricter than those issued in many other territories, but nowhere are they enforced more ruthlessly than in the Union, especially with regard to the provision that all Africans in towns are always liable to eviction within a month's notice from all proclaimed urban areas.¹³ This cannot be fully explained by

the economic privileges which European rural landowners and skilled workers alike want to maintain at the expense of the native manpower. The religious flavor of many statements by South African politicians must also be taken into account, as there are clearly too many people in the country who think that the sight of people of their particular race alone can be agreeable to the Lord.¹⁴ A remarkable feature of the situation resulting from an elaborate legislation, supported by oversimplified theological concepts, is that actual segregation is far from complete in South African towns. In Johannesburg alone 50,000 Africans are living in white quarters as domestic servants; and it seems, therefore, that the ultimate result of the Union policy will be to produce a system of castes rather than true segregation.

With regard to the Belgian Congo, the basic feature of the organization of the towns is a system of racial segregation inaugurated by the Congo Free State as part of its new and ill-fated economic policy in 1898.¹⁵ Segregation, in this case, was held to be based on cultural differences, but no provisions were made for the advent of civilized Africans, so that British subjects from West Africa and black French citizens are confined to the native location. Residence with Europeans cannot be allowed to an African without a special permit and this tends to become exceptional, as new houses are built for the white residents without servants' quarters. Such a system is entirely foreign to Belgian tradition, as shown in the liberal attitude of many individuals in their daily relations with Africans. A strong color bar exists in many fields but, as the highest officials in the colony have often shown their

¹⁰ *Cape Times*, Cape Town, March 10, 11 and 12, 1947.

¹¹ Centralist policy advocated in Union Government, 28/1948: *Report of the Native Laws Commission* 1946-1948, Pretoria, 1948; also popular among Africans prior to the advent of the Nationalist Government as shown by Z. K. Matthews: "Native Policy Indicted—Bantu View of Present Situation," *Forum*, Johannesburg, September 14 and 21, 1946.

¹² W. P. M. Henderson: *Durban, Fifty Years of Municipal History*, Durban, Natal, South Africa, 1904, p. 130.

¹³ Discontent officially expressed in Union Government: *Native Representative Council Report*, Annual, Pretoria.

¹⁴ Religious arguments in almost all important speeches by South African nationalist leaders, f.i. Dr. Malan speaking at the inauguration of the "Voortrekkers" Monument, Pretoria (*Cape Times*, December 17, 1949). Misuse of predestination doctrine criticized by Methodist minister Ray E. Phillips: *The Bantu in the City, A Study of Cultural Adjustment in the Witwatersrand*, Lovedale, Cape Province, 1938.

¹⁵ Congo Belge: *Les origines des institutions urbaines au Congo Belge* (Service de l'Information, Léopoldville, Belgian Congo, 401/III. 2, April 31, 1945).

disapproval of it, the responsibility for this system must be traced to clumsy interference from the "ministère des colonies" in Brussels, whence legislation is issued in blissful ignorance of local conditions. These laws, thanks to the absence of true racist feelings among the colonial population, and also to missionary action, are not always rigidly enforced and the African, in fact, suffers less from their existence than in South Africa.

Self-contained townships styled "native centers" (formerly "extra-customary centers") have been constituted at thirty-six places in the Belgian Congo. The local authority consists of Africans nominated by the colonial commissioner and all matters of local interest come under their jurisdiction.¹⁶ They stand as a major success of Belgian colonial policy, but it must, however, be admitted that the system so far has not been proved workable in very important towns, that it offers no solution for inter-racial problems, and that the larger part of the wage-earning population in the colony is still living in industrial compounds under private supervision. Elizabethville, the capital of Katanga, had a native center kept entirely separate from the European township, but nearly two-thirds of its African population lived in industrial compounds, in servants' quarters, and in suburban areas where they could have no share in local government, until 1945, when the native authority was suspended and the center put under direct supervision of Government, as a poor remedy to unrest resulting from the absence of prospects for healthy development in a community of petty traders and poorly paid artisans kept so strictly separate from the heart of the general urban community. Léopoldville, where no organized native center has ever existed for a population well over 100,000,¹⁷ has a European official in charge of all native interests although an advisory native council was constituted in 1945. The European in charge

appoints ward chiefs but is also in daily touch with tribal and professional leaders known as "capitas" of whom the law knows nothing. The failure of government to recognize the existence and vitality of this institution of "capitas" which is of native origin shows how far from the facts the official system remains.¹⁸

CONCLUSIONS

It appears to be difficult, in Africa as well as in other parts of the world, to turn the inevitable amount of segregation that exists in modern towns into an organized method of urban administration. Segregation lines keep moving in accordance with so many changing factors that legislation can hardly follow them, even in those territories which, having run berserk with color madness, are issuing annually more laws to suit the wishes of the privileged race. Nevertheless, there remains something of importance to retain from the experiments in legal segregation made in Africa. It is the obvious fact that some special form of administration may be necessary, to deal with very backward sections of the urban community, when they are utterly unable to take part in local government in the modern sense of the word. The problem as to what form this administration should take can only be solved in relation to the facts, and by profiting from the experience of many regions within and outside Africa. The example of Kenya shows how segregation may be combined with direct representation of the African residents in the municipal council. An objection to the Kenya policy is that some adverse reaction from the white residents must be expected when the time comes, as it will come, that the majority of town councillors are of African descent. The setting up of two separate boards to advise the municipal council, one on the needs of the European and Indian population, one on those of Africans, may then become inevitable.

On the other hand, the possibility of a racist philosophy developing on the same lines as in South Africa cannot be ruled out,

¹⁶ Congo Belge: *Les centres indigènes au Congo Belge* (Service de l'Information, Léopoldville, 314/V.6, December 23, 1944).

¹⁷ Congo Belge: *Organisation de la cité indigène de Léopoldville* (Service de l'Information, 575/V.6, October 30, 1945).

¹⁸ A qualified approval is granted to the Belgian system by Lucy P. Mair, *Native Policies in Africa*, London, 1936, p. 241.

* Paper presented at the American Sociological Association meeting, December 27-30, 1945.

and it is necessary therefore, to see how the interests of the underprivileged can best be preserved under such circumstances. A close examination of the case of the Union shows that an extension of local autonomy would suffice to alleviate the lot of many African residents, as it would enable them to move from places where life was a burden to them to others where the municipalities, if given more freedom of action, would welcome them. The case of the United States may be mentioned, where the Negro population has been allowed to migrate by millions from the South to the more hospitable towns in the North, a spectacle which could have no parallel in Africa, under the existing legislation. Such freedom granted to local bodies would be a guarantee against oppression in the eventuality of another racist government taking power in an African territory.

Fully efficient government, however, cannot be secured by such a strictly negative policy. Healthy race relations depend on legislation under which poverty and ignorance are treated as a social and economic evil rather than a racial problem. The contrasting example of the towns in French Africa offers food for thought in this respect, as I was able to verify in travelling first from Léopoldville, Belgian Congo, to Brazzaville, French Equatorial Africa, and later on from Lagos, Nigeria, to Cotonou, Dahomey. Right in front of Léopoldville, on the opposite bank of the Congo river, Brazzaville is situated, and can be reached by motor boat in less than twenty minutes. The

French capital at first glance looks much the same as a provincial Belgian Congo town, except that money is obviously scarce. How is it that the population of Brazzaville, and this includes the white as well as the black population, enjoy life so much better than many people from the other side go there on week-ends merely for the pleasure of breathing in a freer atmosphere? The only possible explanation to such a strange fact lies in the feeling of a spiritual freedom which grows among people delivered from the shackles of an unworkable philosophy. There is, on the whole, as much segregation in Brazzaville and Cotonou as in Léopoldville and Lagos, but the French take it as a fact, not as an order from God that must be expressed in the law. Every black man among them knows that no one would prevent him from living among Europeans if he wanted to adopt their way of living, and that is as much as he wants, while the municipal authority remains free to solve its problems of administration without a racial bias. The result, as pointed out by both an American Negro visitor and a Belgian professor, is that he revels in the possession of one of the most precious gifts that can be enjoyed on earth: Hope.¹⁹ Legal segregation, no doubt, destroys the freedom which alone allows of growth and hope.

¹⁹ Guy Malengreau, University of Louvain, quoting Mrs. Paul Robeson, in "La situation actuelle des indigènes du Congo Belge" (*Bulletin de l'Institut Royal Colonial Belge*, Brussels, I-1947, pp. 216-228).

ORDINAL POSITION IN THE FAMILY AS A PSYCHOLOGICAL VARIABLE*

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THERE appear to be two main approaches to the study of the family. One describes the family as a group having certain properties that differentiate it

from other groups. It has a certain kind of structure; it has a set of internal relation-

a collaborative study undertaken at the Iowa Child Welfare Research Station with the aid of a grant from the Rockefeller Foundation. Other members of the research group who contributed directly to these data were Vincent Nowlis, John W. M. Whiting, Emanuel K. Beller and J. L. Gewirtz.

* Paper read at the annual meeting of the American Sociological Society held in New York, December 27-30, 1949. The data here reported are from

ships that can be specified by reference to the roles of the family members; and, as a group, it has certain legal, economic and status relations to other groups. Possibly not all sociologists would wish to identify themselves with this approach, but systematically speaking this is a sociological way of ordering the social events represented by the family and its activities; it is so because it takes the group as the unit of its study.

The other approach to the family, which is essentially psychological, takes the individual as the unit of its study. The family is conceived as creating a particular kind of social structure within which the individual is embedded, which acts upon him in diverse ways and on which he acts. The family is conceptualized as an environmental factor having the twin functions of instigator to behavior and manipulandum for behavior. It provides the main setting in early life for the learning of those behavior characteristics that have both individual and social reference, skills such as talking and feeding oneself, and motives and values. A description of the family, in other words, is a description of the conditions of learning for a child born into that family.

These two approaches supplement each other. Implicit in the sociological method is the assumption that there are regularities from one family to another in the basic characteristics of the different family roles. To the extent that this is true, there are therefore consistencies in the kinds of behavior performed in the family circle by these different members. For example, if the family structure in a particular society is such that the mother is the care-taker of infants, while the father is the economic buffer against the rest of the society, there will be allocations of responsibility within the family that would differ from those of a family belonging to a society in which an extended family provided the child-care activity and the mother had extra-familial economic duties. Furthermore, it would be expected that the child-care activities would be carried out differently in the two societies because different kinds of people with differing behavior potentialities would fill the role of care-taker. That this

is true has recently been demonstrated by Whiting in a cross-cultural comparison of these two types of family structure. He found that societies in which grandparents customarily resided in the household and participated in child care had reliably more severe aggression and independence training than societies in which all care was done by young mothers themselves.¹

To the extent, then, that a society has a regularized family structure in which there are consistencies from family to family in the kinds of behavior required of each family role, the role itself may be used as an index of the occurrence of certain behavior and certain learning experiences. Ultimately, the explanation of an individual's behavior must be driven back to the exact circumstances of his rearing and of the immediate stimulative forces acting upon him, both biological and social, but for the discovery of regularities in personality development, the indices represented by family roles appear provisionally fruitful. The major task of science, after all, is the ordering of the events of nature in such a way as to permit generalized statements about antecedent-consequent relationships; it is not required to devote itself to the full and complete explanation of individual "naturalistic" events.

An interesting example of the relationship between a family role and presumably learned behavior characteristics is to be found among children who have different ordinal positions in the family. Dean² investigated the personality characteristics of twenty pairs of children by having the mother in each instance make paired comparisons of her own two children on a large number of items. Each pair of children was of the same sex, eight of the pairs being girls and the remainder boys. In all the families there were but two children and all were under seven years of age. Children in the first ordinal position were judged by their mothers to be more dependent, to spend more time "just thinking," more worried,

¹ John W. M. Whiting, paper to be published.

² Daphne A. Dean, "The Relation of Ordinal Positions to Personality in Young Children," MA Thesis, State University of Iowa, 1947.

more excitable, to have their feelings hurt more easily, to be less demonstratively affectionate, and to be less effective in protecting themselves from verbal or physical attack. These differences suggested that the two ordinal positions in the family were in all likelihood accompanied by certain uniformities of experience that molded the personalities into what might be called "first ordinal position role type" and "second" type. It is evident, of course, that not all the differences are necessarily ascribable to role differences; other factors vary, too. For example, mothers are more experienced and more busy by the time a second child is two years old. In any case, the data suggest that there may be consistently different experiences for older and younger children.

In an effort to discover what some of these might be, data from another investigation have been examined. These data will be published in more detail elsewhere, but there are a few relationships that deserve description in the present context. Forty-two three and four year old children in the University of Iowa preschool were observed under standardized conditions four hours each during a four month period by Gewirtz.³ Among the measures taken were frequency counts of various types of nurturant and dependent behavior. The children were also rated on various types of dependency by their teachers.⁴ The mothers of the children were interviewed about their methods of child-rearing, the interviews being recorded and then transcribed for analysis.

The content of each interview was classified by a subject-matter index based on the Yale Cross-Cultural Survey, and each sentence or paragraph relating to each code number was retyped and appropriately filed. The interview material was ultimately in the form of separate slips of paper filed entirely by subject-matter. One file folder, for example, contained all the references by all the

mothers to the problem of infant feeding, another contained everything on the weaning process, another covered the training of independence, another the methods of handling aggression, and so on.

In order to determine the nature of differences in child-rearing procedures used by the various mothers, it was necessary to convert this descriptive information to quantitative scales. Since this was a pilot study, it is perhaps not surprising that the interviews contained insufficient information on some points, and it has proved impractical to try to scale all the behavior dimensions that one might wish. However, a few dimensions permitted adequate rating, and some of these are relevant to the matter of ordinal position.

The majority of the children were either first or second children or only children; seven were from families with three or more. In spite of this skewed distribution, and the anomalous situation created by only children, there were two child-rearing characteristics that appeared to be related to ordinal position. One of these was the use of self-demand feeding in infancy. Second and later children were treated more permissively in respect to scheduling of feeding than were first or only children. Other aspects of infant nursing and weaning were also less frustrating for them. Secondly, the mothers provided less nurturance (affectionate care-taking and helping) at bedtime and slightly less worrisome cautioning about sickness and danger for the second and later children.

The correlations supporting these statements are small, but together with some other scales relating to total current nurturance, and certain qualitative materials presented in the interviews, it seems evident that something rather consistent in child-rearing changed between the first and second children. The mothers became less anxious about their own skills and less concerned about the health and well-being of their children. Pediatric advice requiring rigorous control of the feeding process was more disregarded; the child was allowed more weight in determining the treatment given him. Mothers evidently discovered that their anxieties about health

³J. L. Gewirtz, "Dependent and Aggressive Interaction in Young Children," Ph.D. Dissertation, State University of Iowa, 1948.

⁴E. K. Beller, "Dependence and Independence in Young Children," Ph.D. Dissertation, State University of Iowa, 1948.

were over-determined and they let the children have less-restricted play. Less ritual and ceremonial attention was given the child at bedtime; he was taken more casually and with less concern.

Doubtless other factors besides child-rearing experience and the changed family structure conduced to changes in methods of rearing later children. One factor that proved of considerable importance in the present study was the social mobility of the mothers. From interviews with the mothers, information was obtained that permitted an evaluation of their present class status and the class status attained by their parents. By comparison of these values, it was possible to identify those families that were reasonably stable in lower and upper middle class status and those who were mobile upward from lower middle to upper middle and downward mobile from upper middle to lower middle. There was a highly reliable relationship between mobility upward and the use of self-demand feeding. From an examination of the interviews, it appeared that this represented an attempt on the part of mobile mothers to adopt the currently fashionable permissiveness recommended by the more progressive and literate pediatricians. Mobile mothers read Spock. They follow the canons of modern advice on infant care.

It is interesting to note, however, that these same mothers, when left to their own devices, tended to be somewhat more punitive with regard to aggression. There was no difference between the stable groups of upper and lower middle class mothers in this respect, but the upward mobile mothers evidently took the control of aggression more seriously. In this connection it is worth noting that modern pediatric advice is considerably less specific, and has less of the simple recipe quality, about the handling of aggression than about methods of feeding. So, while the mobile upward mothers were able to absorb the notion of permissiveness in feeding, the tension and strain that appear to go with upward mobility led to greater punitiveness of aggression. That anxiety over status leads to more directive and severe control of children was clearly demonstrated in a labo-

ratory situation by Merrill.⁵ These upward mobile mothers demonstrated it in their real life behavior.

The effects of adding younger children to the family, then, seem to be in the direction of a reduction of severity in nursing and weaning and a reduction of bedtime ceremonial. Doubtless there are other factors that change, too, and these will eventually be discovered by further investigation. In the meantime it is interesting to note certain kinds of behavior in these children. In general, on the basis of the teachers' rating scales, the second and later children were somewhat less dependent than first and only children. The differences are small and not statistically reliable, but they are consistent through a number of scales and direct observations. However, the correlations of the child-rearing characteristics with ordinal position were relatively small, too. This is always likely to be the case when one uses an operationally defined variable from one systematization of events, at one level of complexity, as an *index* of another kind of variable at another level of complexity. In the present instance, ordinal position role is a sociological variable, and we are trying to use it as an index of certain psychologically consistent events in the learning experience of the child.

The next question must ask what are the effects on child behavior of those child-rearing methods of which ordinal position is an index. The relation of those methods to behavior can be examined without reference to ordinal position.

✓ The first of these factors, degree of frustration in connection with nursing and weaning, is positively related to dependent behavior in the preschool. Correlations of the frustration scale with such scales as "seeks help from teacher," "seeks help from other children," "seeks praise," "seeks attention from teacher," and with the raw total of dependency incidents observed in the Gewirtz study, are all in the .30 to .45 range. Interestingly enough, there is no relation between nursing

⁵ Barbara Merrill, "A Measurement of Mother-Child Interaction," *Journal of Abnormal and Social Psychology*, 1946, 41:37-49.

and weaning frustration and the total frequency of overt aggression in the preschool, but there are two teacher rating scales related to inhibited aggression that correlate with early frustration: "exhibit displaced attacks" (+ .38) and "threatens teacher" (+ .23).

The second correlate of ordinal position, degree of bedtime nurturance, is unrelated to any of the measures of child behavior in the preschool situation. This suggests that the nursing and weaning frustration in infancy is the factor responsible for producing the slight but positive correlation between early ordinal position and dependency behavior.

This hypothesis gains some support from a theoretical analysis of the origin of dependency behavior. The infant is entirely dependent on the mother for sustenance, for the food that can satisfy his primary—and urgent—hunger drive. During the first few months of life he must learn to control his mother and to secure what he wants through her. If her rigidity of scheduling of feedings and her method of handling the weaning process are such as to decrease the child's ease of gaining satisfactions, he would be expected to suffer, over the long term, an increase in his anxiety with respect to both food-getting and control of his mother. The increased strength of total drive produced by this anxiety would strengthen the motivation underlying the behavior that has as its aim the controlling of the mother, i.e., the dependency behavior. Through stimulus generalization, this type of behavior would then be expected to occur in any social situation involving unsatisfied needs and/or the presence of persons like teachers who represent mother surrogates. In effect, the anxiety originally produced by nursing and weaning frustration would serve as the facilitating instigator to whatever behavior had been predominant in those infant situations in which the anxiety was aroused. In the case of nursing and weaning frustrations, this behavior would be mother-controlling, attention getting, and food getting. Unfortunately the

present data include no information concerning the details of the children's eating behavior, so the latter expectation can not be tested.

This conflict theory of the origin of secondary drives was first proposed by Whiting in connection with a theory of the origin of beliefs concerning the causes of disease, and has proved useful in ordering a considerable body of cross-cultural data on that problem. It is encouraging to discover that it is congruent with the present findings. It would not be wise to place too much reliance on these present data, however. The study was a pilot study, with inevitable inadequacies in the collecting of the mother interviews; the number of cases is small; the reliabilities of the interview scales are adequate but by no means maximal; and the number of uncontrolled variables is greater than one might wish. The findings should be considered as suggesting some useful hypotheses that, after further theoretical refinement, would be worth examining with new and more abundant data.

In sum, it appears that second children are somewhat less dependent than first. Dependent behavior is related to a history of frustration in nursing and weaning experiences, and the mothers of second and later children tend to be somewhat less frustrating than the mothers of first children. It is not clear from the present study whether this difference is related to some basic difference in the family structure and the roles composing it, or to greater experience of the mother and her decreased anxiety about the child, or to her social status mobility upward. Variation in frustration of nursing and weaning is related to all these three factors and further investigation will be required to isolate the constant variable. In any case, this type of research involves the interpretation of the family as a learning situation for the children in it, and potentially provides a way of bridging the gap between sociological and psychological approaches to the field of family research.

SOCIAL SCIENCE RESEARCH IN THE NATIONAL MENTAL HEALTH PROGRAM*

JOHN A. CLAUSEN

U. S. Public Health Service

PRIOR to passage of the National Mental Health Act in 1946 there existed, within the United States Public Health Service, a Division of Mental Hygiene whose responsibility was largely confined to research on narcotic addiction and to administration of the two U. S. Public Health Service Hospitals at Lexington, Kentucky, and Fort Worth, Texas, which are primarily concerned with treatment and care of narcotic addicts. Although on paper the Division had some responsibility for research into nervous and mental diseases, the research program was never really implemented by an adequate allotment of funds. The act of Congress in 1946 constituted a declaration of intent to provide funds for a broad program of research, training and aid to States for the development of means of dealing with our mental health problem.

A brief review of the evidence presented and the individuals and groups participating in Congressional hearings which resulted in the final formulation of the Act reveals at least four forces which helped to convince the Congress that action in this field on the part of the Federal Government was imperative. Perhaps most overwhelming was the presentation of statistics on the rejection rate for neuropsychiatric disorders during the operation of Selective Service, and the high n.p. discharge rate from the armed forces. Almost equally impressive were the statistics presented on the patient population in mental hospitals, a population in excess of 600,000, occupying slightly more than half of the hospital beds in the nation. In addition to the weight of this evidence that a problem of great magnitude and tremendous expense to the nation and to the separate States existed, one may assume that the Act bore testimony to several decades of effort on the part of

private organizations interested in the provision of more effective mental health services for the nation. In this field, for example, the National Committee for Mental Hygiene, the Psychiatric Foundation and the National Mental Health Foundation had organized many local groups to work for better mental health services and had widely disseminated information materials relating to mental health problems and to the need for more adequate facilities to deal with such problems. The fourth of the more obvious factors underlying the National Mental Health Act was a trend operating within the public health field. Specialists in this field have been moving from an earlier focus upon problems of environmental sanitation and immunization, for the prevention of epidemics, to increasing concern with the crippling and degenerative diseases and, more generally, with the healthy functioning of the individual organism as a whole. The definition of health given in the Preamble to the Constitution of the World Health Organization attests very clearly to this trend: "Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."¹ Along with attention to such fields as heart disease and cancer, therefore, it seemed fitting that public health workers should give increasing study to a group of ailments which probably impair the effectiveness of more persons than any other single disease or group of diseases.

It may be well at this point to describe briefly the public health approach to mental health problems. We are referring now to the professional discipline and not necessarily to the U. S. Public Health Service. The definition of a public health problem is rather similar to the definition of a social problem in general: "A health problem becomes a public health responsibility if or

* Paper read at the annual meeting of the American Sociological Society held in New York, December 28-30, 1949.

¹ *Final Acts of the International Health Conference, United Nations, October 1946, p. 11.*

when it is of such character and extent as to be amenable to solution only through systematized social action."² Assuming that mental health problems are amenable to solution, they certainly fall in this category. In general, there are two main spheres of action in the public health approach: (1) research to increase the body of scientific knowledge about diseases or health conditions and (2) the development of an administrative organization to make knowledge functional in the community.³

One of my associates has elaborated five major objectives of public health work which are particularly pertinent in a mental health field. In short, any public health program must concern itself with: (1) the measurement of the nature and extent of the health problem involved, (2) the development of inexpensive, rapid, reliable and valid methods of identifying individuals in need of care, (3) rapid and economical methods of treatment, (4) the discovery of preventive measures, and (5) the promotion of positive health.⁴ At the moment it must be acknowledged that not one of these objectives has been attained. Indeed, despite substantial progress in some aspects of therapy, these objectives are far from attainment in the field of mental health.

What roles are being played by social scientists working with members of other disciplines toward these objectives, and what future roles may be envisioned? Several observations as to the nature of the mental health program may be of interest. As a consequence of the way in which the National Mental Health Act came into being and as a consequence of its administration by the Public Health Service, the program has developed in a medical context. The care and

treatment of the mentally ill is, of course, basically a problem for psychiatry. That phase of the program relating to the training of much needed clinical personnel within the fields of psychiatry, clinical psychology, psychiatric social work and mental health nursing has had a high priority in the program.

The appropriateness of the program's having developed in a medical context is thus obvious, but this fact has implications which may not themselves be immediately obvious. The clinical team in the mental health field shares certain understandings and approaches to the problem which have been evolved over a considerable period of time. It might not be inappropriate to refer to these shared understandings and attitudes as a professional subculture. In the structuring of relationships among the disciplines included in the clinic team, one finds a prestige hierarchy and a code of interdisciplinary ethics as well as a division of labor and a body of both scientific and pragmatic knowledge and skills. Moreover, the patterns of relationship and the assumption as to how mental health problems should be dealt with, which have been built up in the clinical situation, tend to carry over into other, nonclinical activities.

The role of the social scientist, on the other hand, is as yet undefined within the field of mental health services, except perhaps to be relegated to the vague area of "studying community resources and relations." In part this reflects the individual focus of clinical disciplines which have done most of the work in this field; in part it reflects the fact that social scientists have not to any great extent sought participation in clinical or social action programs. Let me make it clear that I am here referring to general tendencies within disciplines and not to staff problems in the National Institute of Mental Health. The fact that social science has been given status, if not a clearly defined role, in the program reflects a more than cordial attitude toward working out the role in which social scientists can contribute maximally.

The writings of more and more psychiatrists attest their awareness of the importance of social and cultural factors in the

² Harry S. Mustard, *Introduction to Public Health*, second edition, New York: The Macmillan Company, 1944, p. 12.

³ For a more thorough discussion, see Paul V. Lemkau, *Mental Hygiene in Public Health*, New York: McGraw-Hill Book Co., 1949, Chapter 2.

⁴ Summarized from Joseph M. Bobbitt, "Counseling and Psychotherapy in Public Mental Health Work," unpublished paper presented at the National Symposium on New Trends in Counseling and Psychotherapy, University of Illinois, Urbana, Illinois, February 26, 1949.

maintenance of mental health or, conversely, in the precipitation of mental illness.⁵ There is, in fact, a tendency for clinical workers to turn to the social scientist for knowledge that he does not now possess. This is especially true because the questions asked by the clinician frequently stem from that subculture which the sociologist does not share with the clinician.

With this general background, we come to a consideration of the place of social science research in the operations and plans of the National Institute of Mental Health.

The research program of the Institute is two-pronged, involving the stimulation of research by scientists outside the Public Health Service, through a program of grants and fellowships, and at the same time providing for intramural research on a rather large scale. The funds available for research grants have ranged from \$400,000 to \$800,000 per year, yet it has never been possible to make grants to more than a third of the applicants who have submitted project descriptions. Funds being available, grants are made upon recommendation of the National Mental Health Council—a group of six eminent consultants—to the Surgeon General of the Public Health Service. Since the Council has several other responsibilities and its members cannot review in detail the background and merits of every project and every investigator presenting an application, the Council delegates the function of detailed review to a committee of 21 consultants representing outstanding professional competence in many of the disciplines concerned with mental health research—psychiatry, neurology, psychology, pediatrics, experimental biology, biochemistry, the social sciences. The interests and viewpoints of social science are represented by an anthropologist, two sociologists, and a social psychologist.

⁵ Within the last two years there have been two competent surveys of the literature bearing on the relationship of social and cultural factors to mental health and mental illness. See R. H. Felix and R. V. Bowers "Mental Hygiene and Socio-environmental factors," *The Milbank Memorial Fund Quarterly*, XXVI (April 1948), 125-147; and H. W. Dunham "Social Psychiatry," *American Sociological Review*, XIII (April 1948), 183-197.

Some of the projects of interest to social scientists which are currently being supported by mental health research grant funds were listed in the August 1949 issue of the *American Sociological Review*.⁶ Of particular interest are Barker's "Field Study of Children's Behavior," several studies on group therapy and social situations in psychotherapy, and Stanton and Schwartz's "Psychiatric and Sociological Study of a Mental Hospital Ward." Several additional projects whose principal investigator is a sociologist or an anthropologist have more recently been approved for grants.

Research fellowships to the amount of \$100,000 annually have been available to students and mature scientists interested in improving their knowledge of and for mental health research, regardless of discipline. Such fellowships have been given to psychiatrists desiring research training in the social sciences and to social scientists desiring to conduct research on mental health problems.

Before describing in detail some of the research projected as part of the Institute's own operation, I should like to mention the existence of a Panel of Social Science Consultants whose function is to suggest ways in which the general objectives of the Institution can be furthered by the use of social science knowledge and techniques. The members of the Panel as presently constituted include Warren Dunham and Robin Williams in sociology, Margaret Mead in anthropology, Ronald Lippitt in social psychology, and Lawrence K. Frank, who probably comes as close to representing a general social science approach to the mental health field as anyone in the country. The Panel may be expected to have a significant influence on planning for research and community services in the program of the Institute.

Of the research now in process or projected as part of the Institute's own program, two types may be distinguished: program research, primarily oriented toward program planning and evaluation rather than stemming from theoretical considerations; and more basic scientific research, involving the

⁶P. 534, Research Sponsored through Research Grants and Fellowships, items 1-10.

testing of hypotheses with significant theoretical implications. Any separation of applied or program research from basic or pure research is likely to be somewhat spurious, but it is convenient to distinguish the research which relates to the ongoing operational program from that which is its own excuse for being. Four major areas of program research will be mentioned, although time does not permit even a brief description of more than one or two of them: (1) research on the scope of the mental health problem—the incidence and prevalence of mental diseases and disorders; (2) investigation of existing resources for the provision of mental health services and their utilization by members of the community, (3) evaluation of the effectiveness of existing programs or approaches to providing needed services, and (4) the assessment of the needs of specific communities as a basis for planning and organizing local mental health programs.

At present the annual Census of Patients in Mental Institutions comprises the only source of systematic data on any segment of the population of the mentally ill. Even this segment is not adequately described by the available data, yet it is unlikely that comparable detail can be secured on any other group of mental patients under treatment at the present time. Present plans call for an expansion of the scope of our census activity to give extensive coverage of persons under treatment in out-patient facilities and for occasional sample surveys or studies of persons under treatment in particular communities with well developed services, in order to yield estimates of the extent of treated mental illness. Beyond this, estimation of the prevalence of untreated mental illness will require much more exploration of case-finding and record searching techniques. Conceivably some sort of screening device may eventually be developed so as to be applicable in the community by someone other than an M.D. or a Ph.D. Such a device would permit more intensive diagnostic study of persons suspected of mental illness. However, all types of prevalence studies, whether of treated or untreated cases, will lack precision as long as classification must

be based as at present upon overlapping syndromes rather than nosological entities.

Rather than describe specific aspects of the other types of program research to which I earlier referred, I should like to make a few general observations about our need for more accurate information and a more adequate theoretical framework on which to base a program of mental health services in the community. Thus far, more than half of the funds allotted to the States under the National Mental Health Act have been budgeted for the establishment or expansion of mental health clinics. Unfortunately, we know very little about the extent to which such facilities serve various segments of the population, and we have no means of assessing, even very crudely, what net effect a clinic has upon the mental health level of a community. We know that most mental health clinics have long lists of persons awaiting service, but we suspect that certain population segments are completely unaware of the existence of such clinics. Studies such as Steiner's *Where Do People Take Their Problems* and Koos' *Families In Trouble* indicate that there are many ways, aside from seeking professional assistance, by which people attempt to work through their problems.

The major social science research project now under way within the National Mental Health Program is being carried out in connection with a mental health center which was established a little over a year ago in Phoenix, Arizona. Phoenix has had a tremendous growth of population in the last decade. The metropolitan area is believed to contain about 200,000 people. Except for a small number of psychiatrists in private practice, however, specific mental health services were almost non-existent. The Phoenix Mental Health Center was established to explore the possibilities of developing adequate services within the framework of existing non-psychiatric resources and especially to work toward the development of a preventive or positive mental health program. Although the staff consists basically of a clinical team, a minority of the time of its members is given to clinical activities. Much more effort is going into consultation

and collaboration with workers in other health and welfare agencies and with voluntary organizations whose members are interested in community betterment. Moreover, a major objective of the group is to study the process which they are trying to promote. To this end a sociologist has been added to the team. His role is to study community organization and especially areas of stress and of need, to suggest project designs that will permit use of a measure of evaluation, and to see that a maximum of relevant data for the assessment of the impact of the Center on the community is collected on a day-to-day basis. This is obviously a large order. The task of developing a clinic record system which will produce relevant data for research without reams of social history detail is itself formidable, yet that is only one small part of the assignment. Nevertheless, a start is being made, and the clinically trained members of the team seem to be pleased to have a colleague who can give his full time to some of the problems which would otherwise lead to considerable concern and frustration on their part.

In connection with the operation of the Phoenix Mental Health Center, a grant was made to the Survey Research Center (University of Michigan) to assess the concepts of mental health and the awareness among members of the Phoenix population of local resources for helping persons with mental health problems. Interviews have just been completed in a sample of 500 households in five subcommunities with widely varying characteristics. The method consisted substantially of having the interviewer sketch out several types of problems which experts would regard as reflecting mental health difficulties and then seeing what kind of frame of reference the respondent would place these problems in. There was no effort to assess knowledge of psychoses or of psychiatry but rather an attempt to learn what the respondent would be inclined to do or recommend if he or a friend or relative were faced with problems of nervousness, of marital discord or of rearing a child with a serious behavior difficulty.

The survey will also get at public conceptions as to the availability of certain services and the appropriateness of their use. Insofar as resistances to particular types of agencies and services have been built upon misconceptions and prejudices, a knowledge of these misconceptions and prejudices will aid the staff of the Mental Health Center in more effective planning. Moreover, the survey should provide something of a baseline for the subsequent evaluation of progress in community education.

In time, it may be possible to study the relationship between social tensions and cultural conflicts and the frequency with which certain types of emotional problems occur in various segments of the Phoenix population. Such studies will certainly require a substantial research team, however, and may more properly be considered in connection with the more basic investigations to be carried on in the Institute's intramural research program.

Planning for the intramural research program is still in a very preliminary state. Existing research facilities at the National Institutes of Health in Bethesda were already overtaxed when the National Mental Health Act was passed. One of the major provisions of this Act, therefore, was for the construction of a clinical center with beds for a substantial number of mental patients, offering the best of clinical care and services and complete laboratory facilities for all types of study of mental illness. In keeping with the concept of health as relating to the total organism and the total person, the research facilities for mental health will not be separately housed but will occupy several floors of the single Clinical Center now under construction. Both in design and in equipment, this Center, which is scheduled for completion in the second half of 1952, will represent close approximation to present ideals. Present plans call for approximately 150 beds for mental patients, plus facilities for an out-patient clinic.

Until the Clinical Center has been completed, only a small nucleus of research staff can be built up. Within the next 18 months, it is hoped that a number of key positions

can be filled in the various disciplines which will play a part in this program. And until these key positions have been filled, it would be difficult if not impossible to elaborate specific research plans. There is general agreement that the program to be undertaken shall represent concerted attacks by interdisciplinary teams upon basic problems relating to mental illness.

Patients will be assembled at the Clinical Center on the basis of their representing types of illness and classes of persons of particular interest to major research formulations. Thus—entirely hypothetically—to narrow the range of variability, one might assemble a group of individuals diagnosed as schizophrenic, having an apparent duration of acute illness not exceeding six months, not previously hospitalized for mental illness, and all falling in the age range 20-30. Within a coordinated research program every kind of data which might conceivably be relevant, by virtue of existing theory or experience, would be secured for these patients. Psychiatric and psychological examinations to develop more precise description and analysis of the nature of the personality distortions produced by the illness, study and analysis by neurologists, biochemists, and other specialists seeking clues as to organic states associated with the illness—these and other investigations by medical and biological scientists would be supplemented by the work of social scientists in securing and analyzing data on the place of the individual in the family and the various social settings in which he had developed. Working closely with psychiatrists and psychologists, sociologists and anthropologists might analyze the relationship between factors of social stress or cultural conflicts and the dynamics of the psychosis. All this is hypothetical, but it represents the kind of teamwork that will be sought in the program of the Institute.

In addition to such coordinated programs of research based upon patients assembled in the Clinical Center, there will be fundamental laboratory research in all fields in which it is believed that there may be significant relationships with problems of

mental illness. Although organizational details have not yet been worked out, it may be assumed that specialists in sociology, anthropology, and social psychology will have a chance to do research in the field as well as in the Center at Bethesda. Systematic study of the way in which cultural materials and social experiences are incorporated and elaborated in personality structure in various other cultures and in subcultures within the United States may or may not increase our knowledge of the etiology of the functional psychoses, but should certainly give us more adequate leads than we now possess for building toward positive mental health.

Of lesser theoretical interest but of considerable value would be careful follow-up studies of patients discharged as improved from mental hospitals, to ascertain ways in which adjustments to community living are worked out and relationships between various types of stress—or various cushions to protect from stress—and subsequent breakdown. The fact that a substantial proportion of mental hospital admissions consists of readmissions suggests that intensive study of former patients would yield sufficiently large numbers of subsequent breakdowns to make sound statistical analysis possible. One can hardly afford to study intensively for a period of ten years one hundred adults who have had no history of mental illness in order finally to compare one who becomes psychotic with the 99 who do not. One might, however, study 100 discharged patients in the knowledge that the probability of subsequent breakdown was relatively high. Whether or not one assumes that a knowledge derived from such cases would be of significance for understanding the process of initial breakdown, it would be valuable for understanding the adjustment process and as a basis for making predictions as to the probable success of classes of discharged patients in adjusting outside the hospital. Further, such studies would be a source for hypotheses as to the role of social and cultural factors in etiology, to be tested by research relating to first admissions.

It is our hope that social scientists on

the staff of the Institute will make significant contributions to existing knowledge of mental health and mental illness, but that the volume of relevant research outside the Public Health Service will greatly exceed that which is feasible within this program. There is a need for the broadest possible frame of reference in developing an adequate concept of mental health and an approach not only to prevention but to the promotion of positive mental health.

It is now widely recognized that the definition of particular behavioral patterns as normal or abnormal will vary with the cultural setting, and that cultures differ in the extent to which they permit the free expression of certain tendencies of temperament. Insofar as there has been an attempt in our own culture to take "society as the patient" and to seek a reconstruction of patterns, it has been largely confined to the area of child rearing. Stress has been laid on the desirability of permitting the individual to "realize his potentialities" through a large measure of permissiveness on the part of parents and teachers. Without having attempted any study on this point, I have the impression that in the decade or two preceding the war, injunctions against over-restrictiveness were more largely directed toward teachers, while since the war they have been more largely directed at parents. In any event, it might be of interest if someone would scrutinize such trends to see to what extent they stem from scientific evidence and to what extent they are a reflection of a *Zeitgeist*. I do not mean to suggest that the underlying assumptions are not correct, but there are clearly defined fashions and fads in child rearing as well as in campus behavior.

There is a need for more analyses such as that by Schneider (in a recent issue of *Psychiatry*) in which he questioned the concept of freedom for self-realization as developed by Jung, Fromm and others.⁷ Some psychoanalysts seem to regard positive mental health as freedom from social restraints, freedom from local loyalties and local mo-

ralities; while they regard social conformity as evidence that the individual is not realizing his "true self." Yet as these same analysts would recognize in another context, a self is only acquired within a social process, and avoidance of conflicts and tensions is only possible to the extent that individual motivations do not clash with the requirements of a given social system.

A wider measure of permissible alternatives may be suggested as one way in which greater individual freedom is to be achieved, yet one encounters the dilemma that it is precisely the existence of such a wide range of alternatives that has posed many of our current problems. Technological advances have led to a wide variety of services and pleasures which make life in an urban environment physically quite bearable outside of the marriage bond—except that both the stability of the family unit and that of the individual who is not integrated into any unit appear to have been shaken. Again, Gorè⁸ suggests that the availability of too many alternatives for bringing up our children—and extreme dependence on experts with differing views rather than upon tradition—lies at the root of the anxiety which many middle class American mothers have in relation to their children.

To come back to the point, we are a long distance from any agreement among experts as to what are adequate criteria of mental health. Social adjustment, freedom from anxiety, creativity have been among those most frequently mentioned. I suspect that even if regarded as freedom from anxiety, the factors contributing to mental health differ in different cultures. In our own society, or in subcultures within it, we need much more precise and systematic study of the demands which the individual must be able to meet, and the conflicts which he is likely to internalize. What are the ways in which these demands and these conflicts affect interpersonal relations for particular personality types? How do they correlate with specific types of mental breakdown on the one hand and specific types of creati-

⁷ Louis Schneider, "Some Psychiatric Views on Freedom and the Theory of Social Systems," *Psychiatry*, XII (1949), 251-264.

⁸ Geoffrey Gorè, *The American People*, New York: W. W. Norton & Co., 1948, pp. 71-74.

ity on the other? These are some of the questions that will need tentative answers before a public health approach to problems of mental health can be fully effective.

ECONOMIC AREAS AS A TOOL FOR RESEARCH AND PLANNING*

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I

THE CENSUS PROGRAM OF DELIMITING ECONOMIC AREAS

HUMAN ecologists and demographers alike are dependent upon official sources, such as the Census, for a large share of their quantitative data concerning the functions and functioning of communities and community populations. Yet these analysts frequently have criticized government statistics for being reported for political units of area rather than for some other set of areas which would have a more specific meaning for the classes of problems which they intend to study with the data. The fact that the boundaries of states, counties, townships, and other civil divisions are "nonfunctional" has fostered an attitude that the data collected for these units are seriously deficient for research use.

The Census Bureau has responded to this rather sweeping criticism of the usefulness of its data by designing new units of area which are better suited to the needs of the users of its data. Such units as Metropolitan Districts, Census Tracts, and Industrial Areas have been developed in response to such needs. A great deal of the Census effort to construct more meaningful categories of area for data-reporting has taken the form of striving to delimit expanding urban communities more accurately by enclosing the population which has spilled over the city limits into the surrounding countryside. The technique which frequently has been used for constructing such boundaries is that of combining small adjacent civil divisions to

build up a larger area which approximates some desired unit of area.

Coincidental with these efforts to separate the individual metropolitan units from the surrounding non-metropolitan territory have been numerous attempts by geographers, economists, and sociologists to divide the land area of the Nation into subunits which delimit the principal clusters of population, economic production, or other socio-economic entities. Each such delimitation has been made with some specific application in mind, or has been made on the basis of only one or a few variables. Among the sets of areas which have been delimited are the following:

- Type of Farming Areas¹
- Population Subregions²
- Livelihood Areas³
- Rural Cultural Areas⁴

Other studies, such as those of Woofter,⁵ Lively and associates,⁶ and Hagood and as-

¹ Original delimitation by F. F. Elliott, *Type of Farming Areas in the United States*, Bureau of the Census, 1933. Revised by Bureau of Agricultural Economics 1946, 1949.

² Delimited by O. E. Baker for the Bureau of the Census in conjunction with the 16th Decennial Census.

³ Delimited by F. J. Marschner for National Resources Planning Board, *Area Analysis—A Method of Public Works Planning*, 1943.

⁴ A. R. Mangus, *Rural Regions of the United States*, Works Projects Administration, Special Reports, 1940.

⁵ T. J. Woofter, Jr., "The Subregions of the Southeast," *Social Forces*, Vol. 13, pp. 44-55.

⁶ C. E. Lively and R. B. Almack, *A Method of Determining Rural Social Sub-areas with Application to Ohio*, Columbus: Ohio State University, Department of Rural Economics, Mimeograph Bulletin No. 106, 1938. Also C. E. Lively and C. L. Gregory, *Rural Social Areas in Missouri*, University of Missouri, Agricultural Experiment Station Bulletin 414, 1948.

* Paper read at the annual meeting of the American Sociological Society held in New York, December 28-30, 1949.

sociates,⁷ have subdivided states and regions into analogous areas.

Attempts to deal with some of the problems of the national economy have shown that there is a basic underlying pattern to human activities. Consequently these various delimitations have a great deal in common. A geographer, an agricultural economist, a soils expert, a sociologist, and a market analyst will all agree, for example, that one can identify a "Pennsylvania Bituminous Coal Mining Area," a "Southern Piedmont Textile Manufacturing Area," a "Mississippi Delta Cotton Area," or a "Midwestern Corn Belt," and that in each of these areas a characteristic pattern of gaining a livelihood, a unique set of living conditions, and a specific set of social and economic problems prevail. These same experts have failed to agree, however, on the exact number of such entities which exist and where their boundaries lie. In the absence of such agreement, the Census has not been able to make tabulations of statistical data which would contribute additional information about these areas. The work during the 1930's of the National Resources Planning Board, of Carter Goodrich and his associates, as well as a great deal of independent study, observation, and research by social scientists and others indicates that there is great need for information about the forces and factors at work in each of the nation's principal socio-economic areas. The only hope of gaining such knowledge lies in a summarization and thorough digest of the huge body of county statistics already available and in a deliberate program of collecting and publishing a great deal more data, in elaborate detail, for each of these areas. Interagency cooperation and exchange of information concerning such areas seems to await only an agreement concerning the number of areas to be delimited and their boundaries.

As one of the innovations in the 1950 Census, the Committee on Statistical Areas

in the Census Bureau has sponsored a program of research aimed at establishing such a set of areas, to be used by all Census Divisions whenever it is desired to report data in more detail than the 48 States, but in less detail than the counties. For want of a better name, the term "Economic Areas" is currently being used to refer to these new units.⁸ In conducting its program of research in population distribution, Scripps Foundation also has been interested in establishing a set of standard areas in order to secure a wider variety of local data for use in population studies. During the past five and one-half months the Census Bureau and the Scripps Foundation have jointly carried out the research necessary to the establishment of the Economic Areas for the United States.⁹

The subject matter of this paper permits only a brief description of the areas, and of the procedures used to arrive at their delimitation.¹⁰

Two fundamentally different types of areas have been recognized: (a) Metropolitan Economic Areas and (b) Non-metropolitan Economic Areas.¹¹ Both types are made

⁸ The term "Economic" is used in its ecological sense, i.e., it refers to a pattern of adaptation which has been effected in gaining a living. Above all, it does *not* mean "for use by economists only." The term "Economic Area" is taken to mean "area in which a given pattern of economy prevails." As will be shown in Part II, these areas will have been delimited with the expectation that ecologists, sociologists, and demographers would be among their most frequent users. It has also been suggested that the areas be called Socio-economic Areas.

⁹ The author was loaned to the Census Bureau from Scripps Foundation to make the delimitation. Mr. Calvin Beale of the Population Division, Census Bureau, collaborated in the analytical phase of the study. The staffs of the Census and the Foundation shared the task of computing and manipulating statistically the more than 150,000 indexes for counties which formed the raw data for the analysis.

¹⁰ The Census Bureau plans to release a bulletin which will describe these details.

¹¹ For a discussion of some of the basic characteristics of areas immediately surrounding central cities, as distinguished from areas lying at a greater distance, see my *Structure of the Metropolitan Community*, Ann Arbor: Univ. of Michigan Press, 1949, esp. Ch. 3.

⁷ Margaret Jarman Hagood, Nadia Danilevsky, and Corlin O. Beum, "An Examination of the Use of Factor Analysis in the Problem of Subregional Delineation," *Rural Sociology*, Vol. 6, 1941, pp. 216-233.

up of whole counties. Each of the Metropolitan Economic Areas consists of a central city of 50,000 or more inhabitants and the county which contains such a city, plus any adjacent counties which are known to be closely integrated with the central city—provided the central city and the counties integrated with it have a combined population of 100,000 or more. The Standard Metropolitan Areas, which have been delimited by a federal interagency committee, were adopted as Metropolitan Economic Areas with only minor modifications.¹² Because the work of delimiting the Standard Metropolitan Areas had already been largely completed prior to the initiation of the Economic Areas project, the task of establishing the Economic Areas has been almost entirely a problem of grouping the remaining counties of the United States, comprising more than 95 percent of the land area and about 45 per cent of the population, into Non-metropolitan Economic Areas.

Similarity of social and economic characteristics was the principal criterion used in delimiting the Non-metropolitan Economic Areas, for it was desired that the population of each of these units be characterized by a distinctive pattern of social and economic traits related to its mode of gaining its livelihood. Each grouping of counties within a state was intended to be as homogeneous in these respects as possible. At the same time, each grouping of counties was intended to be as different as possible from the other groupings which surround it. In other words, the delimitation of the Non-metropolitan Economic Areas was an endeavor to minimize the variation within groups while maximizing the differences between group means. In order to assure that a wide variety of social and economic aspects were represented in the delimitation, and to acknowledge the fact that the factors which are of greatest importance in making a socio-economic delimitation vary from one

region to another, many different indexes (from 42 to 61 indexes, depending upon the state) were considered in determining the Economic Area to which each county belongs.¹³ The delimitation was made by states. This makes it possible to study each state individually in terms of its major Economic Areas, and to tabulate state data with Economic Areas as a principal sub-category. Because smaller units of area are needed for reporting agricultural data than for other types of data, many of the units which are to be used for population tabulations have been divided into two or more areas for agricultural tabulations. Most of the non-metropolitan areas designed for population tabulations contain at least 100,000 inhabitants. For the population tabulations there are about 148 Metropolitan and about 293 Non-metropolitan Economic Areas, or a total of approximately 441 areas.¹⁴

In delimiting these areas, the advice and aid of the Bureau of Agricultural Economics has been of great value. Because agricultural factors are of paramount importance in a large percentage of the Non-metropolitan Areas, and because the Economic Areas will be the smallest unit of area for which some of the data from the 1950 Census of Agriculture will be reported, the Bureau of Agricultural Economics has taken a lively interest in this project.

II

SOME POSSIBLE USES OF THE ECONOMIC AREAS FOR RESEARCH AND PLANNING

The uses to which the Economic Areas can be put for research and planning were kept in mind as the delimitation was made.

¹² As a final check on the delimitation, the mean value for each index for each area was computed, and a county by county review was made to assure that each county was classed with the group from whose mean it was least deviant on those indexes which reflected the most important aspects of socio-economic adjustment in that particular region.

¹⁴ The exact number of areas is as yet undetermined because various state and federal agencies are being asked to review the delimitation and to make suggestions for improvement. Not until these suggestions have been studied will the boundaries be considered as firmly established.

¹³ A few of the least populous Standard Metropolitan Areas were not considered to be Economic Areas. The Standard Metropolitan Areas in New England, which are delimited on township lines, were redelimited on county lines.

In an effort to promote the use of the areas in those contexts in which they can be of most help, the remaining pages are devoted to a discussion of some of their possible uses. For convenience in presentation, these uses are discussed in terms of six types: Description, the Measurement of Interrelationships, the Study of Variation, Multiple-variable Cross-tabulation, Sampling, and Administrative Planning.

A. *Description* constitutes the first step of most research undertakings. Since ecological and population problems inevitably have an environmental context, familiarity with that context must precede comprehension of the factors or forces involved in any event which takes place within it. For these reasons, most ecological and demographic studies either must assume an intimate familiarity with the area to which the study refers or must provide that familiarity by giving a more or less detailed description of the environment. Moreover, general familiarity with the environment is an essential part of the training of students in many branches of science. By conforming fairly well to the principal physiographic, economic, and social boundaries of the Nation, and by being designated as a standard set of units for reporting a wide variety of data, the Economic Areas are designed to facilitate the rapid acquisition or transmission of a comprehensive familiarity with the United States and its principal parts. Once the Economic Areas are adopted as standard units, it then becomes possible to describe each of the principal parts of the Nation in terms of its agricultural, industrial, commercial, physiographic, and demographic composition with a minimum expenditure of time and effort.

Familiarity with the environment may be obtained in either of two ways: by cartographic presentation or by statistical presentation. In cartographic presentation it is customary to draw boundaries precisely, and to place a great deal more weight upon the accuracy of the delimitation than upon the possibilities of obtaining data in the future for the areas being delimited. Since the unit of delimitation has been the county, the

Economic Areas will prove disappointing to the ecologists who prefer mapping to statistical tables. On the other hand, those ecologists who prefer to describe by means of frequency distributions, averages, proportions, rates, and other statistical measures will find the Economic Areas a most useful device for organizing and digesting large quantities of statistical data. This group of ecologists has long been faced with the dilemma of choosing between having either precise boundaries or data, but not both. For any area which is precisely delimited, without regard to civil boundaries, it is possible to assemble almost no statistical data. In order to obtain statistics about functional units, it is necessary to abandon ideal boundaries and to make some compromise delimitations along the civil division lines. The Economic Areas are a compromise of this type. They attempt to provide the maximum amount and variety of data about units of area which have been delimited as precisely as possible, given the present resources of the government agencies for collecting and tabulating data. The oft-observed fact that the line of demarcation between two areas is seldom a sharp one, but is almost inevitably a band or a zone of gradual change, tends to lessen the force of the argument that the boundaries must be drawn precisely without regard to civil boundaries.

The Economic Areas permit one to describe the social and economic structure of most States in terms of a few (3-15 areas in most cases) categories of area instead of in terms of several dozen county units. Since the areas "link together" across State lines, it is possible to describe the structure of a region or broader area in terms of a few dozen areas instead of in terms of several hundred or a thousand counties.

As a descriptive device, the Economic Areas permit the easy assemblage of a great many different kinds of statistical data for units which it is hoped most social scientists will agree are genuinely "functional."

B. *Measurement of Interrelationships.* Although social scientists of all schools are primarily "environmentalists," as yet few

sets of areas have been devised which can be used to make a formal test of major environmental hypotheses. Over the last half-century a large body of generalizations have been built up around the proposition that human behavior is an adjustment to the habitat. In studying this assertion ecologists, economists, and demographers alike have tended to adopt a "case study method" in their approach. For the most part, attention has been focused upon one area at a time, and few attempts have been made to compare the behavior of a given variable in several different areas which together are known to present an array of conditions. While the method of studying individual areas is a most valuable device for developing hypotheses, the conclusions which can be drawn from such study have only a very limited generality until tested in a larger context. For formal verification of propositions about the relationship between behavior and environment there is need to subdivide the total environment into a set of internally homogeneous sub-areas, the members of which are of the same general magnitude of size and importance. Each such area may then be regarded as yielding one set of observations to be statistically manipulated with other sets of data from other areas. From the manipulation of the observations for each of the areas, which together may be regarded as a "universe," one can make inferences concerning the behavior of particular variables under varying environmental conditions. The statistical tools for measuring the degree of covariance, and for studying the regression of one variable on another, become available for use under such conditions.

The Economic Areas are well suited for exploratory studies of this sort, for they have, to a considerable degree, the characteristics listed above as those essential to units to be used in the study of the environment. By grouping together county data which are now available, it is possible to compute a great many meaningful indexes which refer to the Economic Areas as environment. These indexes are available for correlation with any aspect of behavior

which one is attempting to study. Thus, the Economic Areas are designed to permit the formal testing of hypotheses concerning the relationships between behavior and the environment, and between variables under varying environmental conditions.

C. The Study of Variation. Until recent years, the principal objective of statistical analysis was the summarization of data by measures of central tendency. Within the past two decades a steadily increasing emphasis has been placed upon the study of the extent and conditions of *variation* as an important element in arriving at valid conclusions. In fact, the analysis of variation is now the very essence of statistical inference. This change in point of view is revolutionizing research in many fields, and promises to dominate the statistical thinking of this generation of scientists.²⁵

It is almost certainly true that the consequences of variation have not been fully worked out in the fields of ecology and population. We have developed elaborate techniques for arriving at averages; our life tables, our fertility tables, our estimating, and standardizing techniques are among the most elaborate statements of central tendency that have been developed anywhere. Yet we have taken only the most informal and sketchy account of the extent and conditions of variation in population and ecological phenomena. Rates and averages are computed for the nation and for broad regions, with apparently little awareness or concern that in most instances the variation within each of these broad areas is as great or

²⁵ In his presidential address before the American Statistical Association a year ago, Professor George Snedecor stated, "It seems that in our own time, the professional statistician's peculiar function is to develop and publicize the implications of variation. The future I do not pretend to know; but the consequences of variation, in the broad sense of uncertain inference do not seem to have been entirely worked out. It is reasonable to believe, then, that both at present and in the foreseeable future, the professional statistician's most useful contribution to science is in the theory and practice of uncertain inference." See his "On a Unique Feature of Statistics," *Journal of the American Statistical Association*, 44 (March 1949), pp. 1-2.

greater than the variation between them. Instead of setting out to discover the pattern of variation in demographic and ecological phenomena, and of attempting to explain that variation, we have taken a different course: By using the newly formulated principles of statistical inference we have designed sampling techniques which permit us to produce averages in greater quantities, about more subjects, and for more instants of time, than ever before. While this is not an activity to be condemned, certainly it is only one of several possible courses which the study of variation in the realm of population phenomena should take.

Although it is undoubtedly an oversimplification to assert that a lack of a homogeneous set of areas is alone responsible for the late start being made in the study of variation in the social sciences, yet the availability of such a set of areas is one of the necessary tools for experimentation in this field. By grouping the entire United States into homogeneous Economic Areas, and by tabulating population data in terms of those units, one of the prime conditions necessary to undertake the systematic study of variation is established.

D. Simultaneous Cross-classification of Variables. One of the standard techniques for obtaining statistical "control" over any variable is to cross-tabulate it with all other categories which are to be used in an analysis. For example, if one is studying the relationship between occupation and education, some statistical control over the factor of age is desirable, for age is closely related to both education and occupation. Before it is possible to state exactly what the apparent effect of education upon occupation is, it is necessary to obtain a tabulation of occupation by education by age. Because complex tabulations of this type frequently have as many as 1000 cells, the unit of population for which the cross-tabulation is made must be a large one. Consequently, few data have been given a detailed cross-tabulation for units of area as small as counties. Cross-tabulations of three or more major variables are usually presented for only the very largest cities,

urban and rural parts of states, geographic divisions, and regions.

The delimitation of the Economic Areas introduces the opportunity to effect some immediate and marked improvements in this program of multiple-variable cross-tabulation of Census data. In making the delimitation, the areas were constructed in such a manner that they can be combined across state lines to form two larger categories of area. For want of a better name these larger units I am calling Economic Sub-regions and Economic Regions. An Economic Sub-region is a grouping of two or more similar Economic Areas, without regard to state boundaries. An Economic Region is a grouping of several Economic Sub-regions which have the same fundamental socio-economic characteristics. For example, by adding together selected Economic Areas from the states of North Carolina, Virginia, West Virginia, Kentucky, Alabama, Georgia, and Tennessee, it is possible to construct a Southern Appalachian Economic Sub-region. This consolidated area is of sufficient size to support the most detailed Census cross-tabulations. Yet as an area for reporting data it has the advantage, which any one of the states mentioned does not, of being a homogeneous economic and social entity. Furthermore, by grouping together similar Economic Sub-regions it is proposed to subdivide the entire nation into a very few (about 20) Economic Regions.

Once the principle that county boundaries are superior to state boundaries for delimiting the major social and economic units of the nation is acknowledged, there is relatively little justification for retaining state units as the sole unit for reporting the more complex Census cross-tabulations for non-metropolitan areas. It would be reasonable to assume that the analyst who makes use of the Census Third and Fourth Series Tabulations (the complex cross-classifications), would be very anxious to have the effect of extraneous factors minimized. This would lead to the conclusion that it would be quite important that the data be cross-tabulated for populations thought to be homogeneous, such as those in the Economic Sub-regions,

as well as for populations known to be heterogeneous, such as those in state units.

The Economic Areas are of sufficient size to yield reliable cross-tabulations. Each of the Non-metropolitan Areas contains enough population to support a cross-classification of any two variables, further subdivided by sex and color or nativity, and urban and rural residence. Each of the Economic Sub-regions (combination of Economic Areas) contains sufficient population to merit any of the Series Three or Series Four tabulations which were made in the 1940 Census by Metropolitan and by Non-metropolitan urban and rural residence. Each of the major Economic Regions (combination of Economic Sub-regions) will contain sufficient population to permit the preparation of even more elaborate cross-tabulations than any yet contemplated. Some very detailed and highly refined studies of the forces at work in each of the broad Economic Regions of the Nation could be made via the technique of simultaneous cross-classification of several variables.

As yet the Census has not committed itself to the preparation of any special population tabulations by Economic Areas, other than those which can be obtained by summarizing county data and those which will be prepared for the migration tabulations. One should not assume hastily that because the establishment of the Economic Areas makes such changes possible, these changes should be made immediately. The superimposition of a subdivision by Economic Areas upon the already complex tabulations of the Third and Fourth Series adds a great deal to the cost of each tabulation. The totals for states, which are essential for many administrative uses and for comparison with previous Censuses, must then be manually summed from Economic Area totals. (Data for the Economic Sub-regions and Economic Regions would be obtained manually by the same process.) When faced with insufficient funds to perform all of the counts deemed necessary to satisfy the needs of its data-users, the Census can introduce additional complexities into the tabulating procedure only when improvement in its total program will

result. At the present time there is little evidence that social scientists as a group are sufficiently dissatisfied with the precedent of preparing multiple cross-tabulations of data by states to warrant any change. Yet because we believe that a demand for functional data of this type is likely to develop in the next few years, Scripps Foundation has urged the Census to prepare at least a few of the principal multiple-variable cross-tabulations for each of the Economic Areas. Unless the Census is given evidence that such data would actually be used for experimentation and research by agencies other than Scripps Foundation, it will justifiably not accede to this request.

E. Sampling. Within recent years the practice of enumerating sample populations has permitted the assemblage of a great deal of data which otherwise could not have been obtained. As is true in the case of multiple-variable cross-tabulation, sample data provide reliable figures only when tabulated for fairly large blocs of population. Hitherto sample statistics have been reported for the nation, for the regions or divisions, for states, and for selected metropolitan districts. Among other things, the size of the unit for which the sample data are reported depends upon the size of the sample. In the 1950 Census there will be samples which are as large as 20 per cent. In a high proportion of instances, the county is far too small a unit to be used in making cross-tabulations of sample data, even where the sample taken is a fairly large proportion of the universe. Such cross-tabulations would certainly be reliable for the Economic Areas, and for groupings of these areas. As yet the Population Division of the Census has not experienced the need to use the Economic Areas in this role of reporting sample data. The Agriculture Division of the Census, on the other hand, plans to make such an application an integral part of its 1950 tabulating plans.

The Economic Areas will undoubtedly find considerable use in the construction of new samples in the future. By yielding a great mass of data concerning the variation from place to place in the demographic and

economic strata of the population, the minimum conditions which must be met to obtain reliable data for a given area can be determined more adequately.

F. *Administrative Planning.* In the post-war years the average time lag between research and the application of research findings appears to be relatively short. The Federal Government has embarked on several programs, and is anticipating others, which require a steady stream of information concerning specific areas. Business and industry are likewise showing a marked interest in the population and economic changes in the various areas in which they operate. For administrative planning, the broad problems of the nation must be broken down into the problems of specific areas. The relationship of these areas to the rest of the nation must be then determined. The fact that the Economic Areas delimit each of the well-known "problem areas" of the nation (as well as those units which are not commonly regarded as problems) should give them a significant place in administrative planning. This delimitation should encourage the preparation of more information and better information about the areas which are involved in administrative decisions than would be possible otherwise.

The fact that the Economic Areas follow county boundaries is an asset when the phase of research gives way to the phase of planning and action, for legal and administrative responsibility for action is clearly indicated in each case.

III

SUMMARY

In an effort to make its data more useful to those who employ state and regional data, the Census has sponsored a division of the entire United States into a set of about 441 Economic Areas which can be used in various combinations for reporting statistical

data. These Economic Areas have several types of possible uses:

- a. They permit a simple yet comprehensive statistical description of the environment.
- b. They permit the formal testing of hypotheses concerning the relationships between behavior and the environment, and of the relationship between variables under varying environmental conditions.
- c. They facilitate the study of variation, which is essential to statistical explanation.
- d. They offer the possibility of increasing the usefulness of the multiple-variable cross-tabulations of the Census.
- e. They offer the possibility of increasing the amount of information reported from sample enumerations.
- f. They permit the assembling of a large body of research findings and information about specific local areas which are involved in planning or administrative decisions.

The Economic Areas are asserted to be particularly amenable to these types of uses because they have the following combination of characteristics which is unique to them:

- a. The areas are much more homogeneous than states.
- b. The number of areas is sufficiently large to permit the use of more advanced statistical tools. Yet the number of areas is sufficiently few to avoid an unusually large burden of computing.
- c. Each area can be given a specific meaning, both from a physiographic and from a socio-economic point of view.
- d. The areas are of approximately equal magnitude of importance in a problem of description, research, or administration.
- e. The areas have been delimited for each state individually, yet can be integrated across state lines, thereby facilitating both local and regional research.

In sponsoring this program the Census has demonstrated once more that it is vitally interested in making its data as "functional" as possible, and in summarizing the results of its enumerations in those forms which will be most helpful to its customers.

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NOTES ON RESEARCH AND TEACHING



OPPORTUNITIES FOR SOCIAL RESEARCH IN THE 1950 U.S. CENSUS OF POPULATION*

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I. INTRODUCTION

Since Philip M. Hauser gave a paper on this same subject at the 1940 annual meeting of the American Sociological Society, it would be interesting to compare his prospectus of opportunities with the actual publications of the 1940 Census of Population and with the research uses made by sociologists. Discussing that topic in detail would leave little time for the 1950 Census, however.

It may suffice here to make only a few general observations. The sheer volume of the 1940 publications was a monument to statistical mass-production. Most of the plans outlined by Hauser were carried out, but there were some regrettable delays and lacunae. The latter were mostly of the nature of the omission of descriptive and analytical texts and of a comprehensive monograph program. The delays and omissions resulted largely from the departure of many staff members for military service and from the preoccupation of those remaining with statistical services for the war agencies. Apart from the war situation, however, the producers of modern censuses are also faced with a dilemma when they try both to provide evaluation, description, and analysis of the data and to put out the data as rapidly as possible. Except in the last few decades, the census was used mainly as an historical record. Nowadays action programs in federal, State, and local governments and such private activities as marketing need census data to help them make pressing decisions. The usefulness of the data decreases rapidly with their age. In fact, some agencies want unpublished worksheets just as soon as they become available so that their own trained staffs can begin to examine them. Obviously, such a procedure is of

little direct benefit to the broader statistical public.

As to the record of sociologists in using 1940 census materials, here again the war may explain a somewhat disappointing performance. There seems to have been an increase after 1945, however, in the annual number of published articles, experiment station bulletins, and theses analyzing census data.

Many sociologists do not need to have the generic shortcomings and advantages of decennial census data pointed out, but these are such important considerations that I should like to inject an early summary of them. Census data are collected in a relatively brief interview by enumerators who have had only a few days' intensive training and who have no professional interest in the subject matter. It is hoped, however, that new training methods developed in recent pretests will result in noticeable improvement in the quality of enumeration.

It is not feasible to interview each adult; information will be obtained from relatives, landladies, and, occasionally, even neighbors. Enumerators who are paid on a piece-work basis will seldom probe beyond the original answer. Furthermore, the schedule carries only a few questions on any subject so that not many facets of a subject can be studied. In the first post-enumerative quality check in census history, interviewers with somewhat more training and skill will revisit a national sample of 25,000 households. They will check selected items of the original schedule, asking additional questions on these items and trying to establish reasons for differences in responses. Some items will be checked against outside records. This valuable supplement will not allow us to correct the main schedules but will give technical consumers information useful in the evaluation and interpretation of the basic published statistics.

Finally, census statistics represent cross-sectional descriptions of the American population at decennial intervals. So far they have contained very little of a longitudinal nature, of the developmental history of individuals. Very little can be found about the vitally important matter of motivation in social and economic

* Paper read at the annual meeting of the American Sociological Society held in New York, December 28-30, 1949.

behavior.¹

On the positive side, the Census presents a statistical inventory that is unrivalled for sheer mass of observations. It is the only inventory that attempts to cover every person in the United States. For large areas, the data can be cross-classified by many attributes and variates before they "run too thin." Simple distributions can be compared among thousands of small areas. Although census data have not been organized to present the changing characteristics of individuals, they give us some of our longest time series on groups. The Census reports also provide benchmarks with which the results of intensive local studies can be compared and against which the representativeness of subsequent samples can be checked.

II. SOURCES OF CENSUS DATA

Surprisingly many sociologists are familiar with only the regular bound volumes of the decennial census. They thus miss entirely many materials that appear only in other media and are a year or two late in getting hold of tables that are published complete or in abstract in press releases and bulletins. As examples of the first situation, the final 1940 reports on such important subjects as fertility, families, and the foreign white stock were never published in cloth bindings but only in heavy paper covers. An example of the second type is a release entitled "Educational Attainment of the Population 25 Years Old and Over in the United States: 1940," which appeared as release Series P-10, No. 8, on April 23, 1942. The bound volume containing this table was not published until November 25, 1943.

The Census Bureau makes very free use of what it calls "press releases." Although these go on the press tables, they are also directed at our technical audience. In fact, the format, text, and tables are far more formal than popular in style. These releases are multithumbed, may run to 15 or 20 pages, and are organized in numbered series. They are usually regarded as fugitive literature by librarians, who hide them away in boxes and may not bother to catalogue them. Hence the student who wants to keep *au courant* with American demography will probably need to establish his own file. (Subscriptions are free.)

¹In the Current Population Survey and other sample surveys, we have asked attitude-type questions, e.g., about reasons for migration and about veterans' housing intentions. Using a panel of respondents, we have also published statistics on month-to-month changes in labor force status.

Of course, many releases can be discarded as they are replaced by bulletins or bound volumes. It should be pointed out, however, that in 1940 some of these releases contained analytical texts, which, though modest in scope, still exceeded what was carried in the volumes.

In 1950, as in 1940, we plan to publish releases based on a preliminary sample of the punch cards. These will appear around the end of 1950 and will cover such subjects as age by sex and color and employment and unemployment for the nation, regions, States, and selected metropolitan areas. The sample distributions will be applied to total populations obtained from the complete count. These advance data will indicate the net effects of the war and of our post-war prosperity upon the demographic characteristics of the broader geographic areas. The unanticipated reprise in net reproductivity and the unprecedented redistribution of population have produced great changes about which we have rather limited knowledge so far. The distribution of population into urban, rural-nonfarm, and rural-farm classes will also be tabulated at this time. In 1940, A. J. Jaffe computed net reproduction rates for these areas by the indirect method. Only rather superficial research can be conducted with these preliminary sample figures, but sociologists will have an up-to-date description of the basic structure of the population. This description may contain unexpected elements that will in turn suggest important fields for later investigation.

The regular tabulations will lead to four stages of publication: (1) press releases containing abstracts of the more basic statistics; (2) unbound State bulletins; (3) these same State bulletins bound into volumes; and (4) special subject reports. The State bulletins will be organized in several series corresponding to the volume numbers. The first series will give only total population for all kinds of political areas and for special statistical areas, such as urban and rural. The second series will give simple distributions of characteristics for small areas. The last regular series will give more detailed data and more cross-classifications for States and large cities. If the plan of 1940 is followed, separate reports will deal with such subjects as the institutional population, the non-white population by race, migration, fertility, and families. More detailed cross-classifications of subjects previously introduced will also be presented. Most of these reports will probably be based on sample tabulations.

Despite the dilemma mentioned earlier in this

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paper, it is hoped that some way will be found to include much more analytical text in at least some of the reports. The United States summaries in each series may be a possible vehicle for this. Such texts should include: (1) detailed definitions and discussions of all concepts, including the development of such concepts through the course of census history; (2) evaluation of the quality of the data, together with an account of any editing that has been done; (3) description of the more important relationships and trends, with perhaps some interpretation; and (4) wider use of maps, charts, and graphs. In the last connection, a statistical atlas of the type of the fine specimen of 1914 may not be altogether out of the question.

Like the analytical texts, the census monograph program suffers by comparison with that of earlier periods. In 1940 we had only Alba M. Edwards' historical analysis of occupation statistics and Warren S. Thompson's study of metropolitan districts.² John D. Durand's book on the American labor force, although published by the Social Science Research Council, may be considered a quasi-census monograph.³ It is necessary to go back to 1920 to find a full-fledged set of monographs. Then we had substantial studies by Niles Carpenter on immigrants and their children, Frank A. Ross on school attendance, William S. Rossister on increase of population, Warren S. Thompson on ratios of children to women, and Leon E. Truesdell on farm population. There was a total of 10 monographs.

Again for 1950, we have the best of intentions. Good monographs add so much to the value of a census at such a small fraction of the total investment. The professional staff that works closely with the data for years has detailed knowledge about them that an outsider cannot quickly acquire. Yet realistically, we know that the staff will be kept busy throughout the census period with the regular reports as well as with the current program. The problem has been submitted to our technical advisory committees for advice on topics and authors. Perhaps teams

consisting of a census staff member and an outside expert will be effective in some cases. There is no lack of material, as I hope to demonstrate later.

Meanwhile a preliminary list of topics has been collected. These topics fall into two broad classes: subject-matter and procedures. Among the things we could well emulate in the Canadian Census of 1941 is a very useful monograph entitled *Administrative Report of the Dominion Statistician*, which summarizes the procedures of that census.

The social scientist looking to the 1950 Census for the materials of research need not confine himself to its publications. Many more data are tabulated than are published. It is relatively inexpensive to obtain these unpublished statistics on photostats of machine sheets or on worksheets if some consolidation is wanted. As an example of the use of unpublished tabulated data in 1940, I may cite T. Lynn Smith's procurement of statistics on educational attainment by color for the urban, rural-nonfarm, and rural-farm parts of Louisiana parishes.⁴ A comprehensive index to the unpublished 1950 data should be provided for the convenience of the public.

Furthermore, additional tabulations can be made from the punch cards after the regular tabulations are finished. Usually, however, this source is beyond the resources of the lone scholar. If he is interested in more data for a small area, he will probably find the cards grouped only by States, urban and rural; and it may cost hundreds of dollars just to sort out the area in which he is interested. Some special tabulations of the cards were made for private agencies after 1940. For instance, the number of migrants was obtained for the census tracts of Chicago, and statistics on fertility were tabulated for farm women of the Southern Appalachians. Part of the unfinished 1940 program was a second migration tabulation. This was to have covered a cross-classification by origin and destination in terms of 328 State subregions (groups of homogeneous counties) as delimited by the late O. E. Baker. Just this year, such a tabulation has been bought by the Scripps Foundation assisted by the Rockefeller Foundation. Warren S. Thompson of the Scripps

² U.S. Bureau of the Census, *Comparative Occupation Statistics for the United States, 1870 to 1940*, by Alba M. Edwards, Government Printing Office, 1943. U.S. Bureau of the Census, *The Growth of Metropolitan Districts in the United States: 1900-1940*, by Warren S. Thompson, Government Printing Office, 1947.

³ John D. Durand, *The Labor Force in the United States: 1890-1960*, Social Science Research Council, New York, 1948.

⁴ T. Lynn Smith and Louise Kemp, *The Educational Status of Louisiana's Farm Population*. Louisiana Bulletin No. 424, Louisiana State University and Agricultural and Mechanical College Agricultural Experiment Stations, December, 1947.

Foundation has enlisted the participation of scholars in more than 30 States, who will make more intensive analyses of the statistics for their respective areas. This kind of cooperation makes available materials that often one scholar could not afford.

III. STATISTICAL AREAS

As usual, population statistics will be published for all the recognized political areas: minor civil divisions (townships, etc.), incorporated places (cities, towns, villages, and boroughs), wards of cities, counties, and States. The number of subjects and the degree of detail will tend to increase with the size of the place.

For many decades, the classification of areas into urban and rural has been fundamental in the reports of the Population Census. The usefulness of this urban-rural classification has been lessened by the facts that the Census Bureau had only recognized political boundaries to follow. Thus densely populated unincorporated suburbs around large cities were unrealistically classified as rural. This was true, for instance, of Silver Spring, which claims to be the second largest place in Maryland. Furthermore, many large unincorporated nonsatellite places were not identified at all. Practices among the States differ widely with respect to incorporation of municipalities. For example, Massachusetts had no incorporated place of fewer than 13,000 inhabitants in 1940, whereas Kansas had scores of fewer than 500. Some entire minor civil divisions were made urban by several special rules in the last few censuses, but these exceptions removed only a small part of the inequities.

As a remedy, the Census Bureau during the past few years has been mapping the built-up suburbs around cities of 50,000 or more. Only time and money have stopped our Geography Division from mapping the suburbs of smaller cities. Easily recognizable physical boundaries have been established from field surveys and aerial photographs, and these boundaries were respected in laying out the 1950 enumeration districts. This "urban fringe," as it has been christened, consists characteristically of land developed in a street pattern and with a density of at least 2,000 per square mile. It is thus a more restricted concept than the metropolitan district, which included minor civil divisions with a density of 150 or more per square mile. The entire aggregate of a central city plus its fringe is called an "urbanized area."

Outside these urban fringes, unincorporated places down to an estimated population of 800

have also been mapped. Those proving to have a population of at least 1,000 in 1950 will be shown separately, and those having a population of at least 2,500 will be classified as urban.

Thus in 1950 the urban population will be defined as that living in places of 2,500 or more (regardless of incorporation status) and in the urban fringes. The urban population will gain several millions by this reclassification, mostly at the expense of the rural-nonfarm population. Differentials between the urban and rural populations will be much more meaningful. The rural-nonfarm population will approximate much more closely the village population with which some persons had prematurely identified it. Thousands of additional villages and hamlets will be shown separately for the rural sociologists, with some demographic characteristics for each. Urban sociologists will be able to study the suburban population as a class and for individual cities. The characteristics of the population classified by size of place would seem of considerable interest, especially if each urbanized area were treated as a single place.

To permit historical comparisons a limited amount of data will be shown for the urban, rural-nonfarm, and rural-farm population of each county following the 1940 definition. Thus the 1950 census will provide a bridge between the new and the old urban-rural classifications.

Another revision of a statistical area has taken place in the case of metropolitan areas. Such areas as metropolitan districts, industrial areas, and labor market areas seemed to be essentially the same concept; but there were petty differences in boundaries that were annoying to consumers. For the last two years a federal inter-agency committee has been applying standard criteria to about 150 different areas. It was decided that the standard metropolitan areas should consist of one or more whole counties.⁵ Although an area can be defined more precisely in terms of minor civil divisions, few statistical series are collected for such units beyond those published in the reports of the Census of Population. The Division of Statistical Standards of the Bureau of the Budget has given the new areas thorough local clearance, and it is expected that they will be widely used.

A standard metropolitan area is being defined for each city of 50,000 or more in 1950. Additional counties must have:

⁵ Except that towns are being used in New England where they are more important administrative units than counties.

- (1a) At least 50 per cent of their population in the old metropolitan district.
or
- (1b) At least 10,000 nonagricultural workers employed there or nonagricultural workers constituting 10 per cent of the total in the standard metropolitan area.
- (2) Less than 25 per cent of the resident employed workers engaged in agriculture.
- (3) Economic and social integration with the central city, as indicated by such factors as heavy commutation of workers, or large volume of telephone calls.

Some of the more detailed cross-classifications of population and housing data will be shown for these standard metropolitan areas in 1950. Because they are made up of whole counties, it will be possible to obtain for them a large number of comparative statistics from earlier censuses. Nonetheless, a few statistical distributions will be published in 1950 for the 1940 metropolitan districts so that changes can be traced for another decade. After 1950, however, the metropolitan districts will be dropped entirely as it is considered that the standard metropolitan areas and the urbanized areas will suffice.

The metropolitan areas are a special type of what is coming to be called "economic areas." These are groups of contiguous, similar counties into which the States are being divided for statistical purposes. There may be about 250 non-metropolitan economic areas. These areas are similar to the previously mentioned State sub-regions used in connection with the 1940 data on internal migration. They will be used in the tabulation of the 1950 migration statistics, which cannot feasibly be shown for every individual county. In addition, other subjects from the population and housing censuses will be shown for the economic areas.

The delineation of these areas has been directed by Donald J. Bogue of the Scripps Foundation, who served for several months as consultant to the Census Bureau. Up to 60 indices from a wide variety of sources have been considered. The same areas will be used for presenting the sample statistics of the Census of Agriculture, which will not be tabulated for counties. As the result of a very cooperative spirit on the part of the Bureau of Agricultural Economics, it has been possible to equate these areas and the type-of-farming areas that have been developed by that Bureau. There is considerable agreement that a standard set of areas of this type will be very useful to consumers of statistics. Their use need not be confined to the Censuses of Population and Agriculture.

Users of census tract statistics may be interested to learn that 75 large cities are now tracted. For 49 of these, the adjacent area has also been tracted, or about twice the corresponding figure in 1940. The number of pages of statistics to be published for each tract will be slightly fewer than in 1940; but such new subjects as family income, the number of married couples, and migration status are being added. Some housing statistics will again be published for blocks in the larger cities.

IV. SUBJECT MATTER

I have come a long way without discussing what can be done with specific subjects. Copies of the 1950 Population and Housing Schedule may be had for the asking. In a short while, we should also be ready to distribute outlines of the First and Second Series State bulletins. Because of time limitations, I will select a few subjects to illustrate research possibilities. From the research standpoint, of course, it is primarily cross-classifications of subjects that are wanted.

Internal migration will be determined by comparing current residence with that of a year earlier. Current survey data suggest that about 6 per cent of the national population will be classified as migrants—residents in different counties at the two dates. In addition, we shall know whether the nonmigrants were living in the same house as before and whether there has been a shift from a farm to a nonfarm residence or vice versa.

For the first time, data will be published for small areas such as counties and census tracts. The categories will be simply: same house; different house, same county; different county or abroad; and migration status unknown. The proportion of migrants will thus be known for thousands of small areas and can be related to other characteristics of these areas. The information on short-distance mobility (within the county) should be particularly interesting for census tracts. In later tabulations for larger areas, such as cities of 100,000 or more, we may obtain such characteristics as color, sex, and age for those who were in the same house and for those in a different house. If migration status of the head in these categories is also punched on the housing cards, such housing characteristics as tenure, type of structure, and quality can be compared for the stable and mobile households of a community.

Finally, in tabulations restricted to the migrants, origin and destination will be tabulated in terms of States and economic areas. The eco-

nomic areas can be combined to produce such natural interstate areas as the Corn Belt, the Southern Appalachians, and the Great Plains. Each individual metropolitan county will be identified as a 1949 residence on the punch card. By this means special tabulations may be possible showing, for example, the movement from each county (including each New York city borough) in the New York-Northeastern New Jersey standard metropolitan area to every other county. For the larger metropolitan areas, such a procedure would permit a study of the dynamics of suburbanization. The demographic and economic characteristics of migrants will be tabulated so that the various streams may be compared with each other and with the non-migrants at the place of origin and destination.

Fertility tabulations will again be based on both the number of own children under 5 in the household and the number of children ever born. The former is useful for analyzing current fertility and for computing reproduction rates for groups not identifiable from birth statistics. The latter is useful for analyzing family size for successive generations of women, the size of completed families, and the incidence of childlessness. Marital fertility will be presented by duration of unbroken marriages. By these means, further light should be shed on the real meaning of the wartime and postwar recovery of the birth rate. The age-sex distributions published for minor civil divisions of counties will permit the simple calculation of thousands of ratios of children to women of childbearing age. I am surprised that I have not seen fertility studies of this type from the 1940 census.

A cooperative matching project with the National Office of Vital Statistics should result in measures of underenumeration of young children and underregistration of births for many areas and groups. Incidentally, the 1950 census will again be the occasion for the revision of some intercensal estimates and the initial calculation of others so that many new or improved vital rates can be published by the National Office of Vital Statistics.

Changes in the population schedule will yield new kinds of information about marital status. It may be possible to distinguish the category "Separated" for the first time in a decennial census. The question on whether this person has been married more than once asked only of women in 1940 will also be asked of men in 1950. For both sexes, we shall also be obtaining the duration of present marital status, e.g., the duration of the present marriage or how many

years the person has been widowed. Analyses from one of our monthly sample surveys have already suggested some of the interesting results that can be obtained from these statistics. For example, the characteristics of persons married less than one year or divorced less than one year are obtainable here for the country as a whole but not from annual marriage and divorce statistics. Tabulation of widows by age, duration of widowhood, number of minor children, and income should be extremely useful in planning social security programs.

Although the family concepts that have been worked out in the Bureau of the Census in the past few years are admittedly quite complicated, the serious student should be well repaid by a careful study of them. Distinctions are made between such units as households, married couples, primary families, secondary families, subfamilies, and unrelated individuals (1-person households and unattached lodgers and servants). A classification of married couples according to whether or not the husband is also the head of the household will yield statistics on "doubling up." For the first time since 1930, statistics on families and on marital status will be published for counties and other small areas.

Unless events in the political field prevent it, much more valuable information on income will be obtained than from the 1940 census. The income statistics in 1940 were effectively limited to wage and salary income, whereas in 1950 total income will be gotten by asking about income from three general sources, of which wages and salaries are one. The 20-per cent sample of families for which income data will be collected should suffice for the publication of fairly reliable distributions and medians for counties, urban places, and census tracts. We shall thus have a valuable index of economic level for many geographic areas, whereas in the past we had only a rough approximation to family income in the form of such correlated measures as rent. For persons income can be cross-classified by other economic, social, and demographic characteristics.

A cooperative project of the Census Bureau and the Bureau of Agricultural Economics will be the collation of a national sample of Population, Housing, and Agriculture Schedules. Thus it will be possible to relate the characteristics of individuals and families to the characteristics of their dwelling units and farms. Furthermore, we should obtain more knowledge of the nature of farm residence and of the population dependent on agriculture. For example, we shall be able to

compare the number of farm households as determined by answers to the question "Is this house on a farm (or ranch)?" on the Population Schedule with the number of farms as determined by further questions on the Population and Agriculture Schedules.

In a few selected supervisors districts, an experimental program of enumeration will be conducted. This program will constitute an extension into decennial census conditions of something that has already been inaugurated in our pretests of 1948 and 1949. Important questions to be examined will include the effect of self-enumeration upon costs and accuracy of data, and the relative efficacy of samples of households and of persons.

The post-enumerative quality check to be made on a national sample basis was described briefly at the beginning of this paper. From its results we hope to publish a monograph where consumers can find material that will help them to evaluate the completeness and accuracy of census statistics and to make adjustments where necessary. Furthermore, what we learn from this quality check should assist us in planning better censuses in the future.

Only a few of the many kinds of data from the 1950 Censuses of Population and Housing have been discussed here. Such data will be available from several types of sources in addition to the regular bound volumes. It is hoped that many sociologists will find materials for fruitful studies into the ever-increasing complexities of our social order. By no means all the aspects of American society are covered by census data, but the number that can be examined through this medium offers a great challenge to those trained in quantitative social research.

SOCIAL RESEARCH OPPORTUNITIES IN THE 1950 WORLD CENSUS OF AGRICULTURE*

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Sociologists would probably do better to spend more of their time on research and less on talking about research opportunities or possibilities. When a researcher feels the urgency of his

problem, as he should, he knows where the possibilities lie and is waiting to pounce on the data; he need not cast about for some problem to do research on nor speculate on how some specific project can be shaped up into a research problem. A report of this sort is perhaps justifiable, however, on the grounds that some of the people with research interests in the materials may have been too busy with other matters to uncover the research potentials of the proposed 1950 World Census of Agriculture, and also on the grounds that there is already on hand an accumulation of census information whose research possibilities have been but poorly exploited.

GEOGRAPHIC SCOPE OF THE WORLD CENSUS OF AGRICULTURE

The purpose of the 1950 World Census of Agriculture is to obtain accurate and comparable information from each government on (1) the number of agricultural holdings and their principal characteristics, (2) the number and characteristics of the people who secure their livelihood from agriculture, (3) areas under crops, (4) numbers of livestock, and (5) the volume of production of all important agricultural products. Not all of these aims will be realized through direct enumeration in the agricultural census proper, but all of them are essential to the general census program.

If all the countries that have indicated the intention to take agricultural censuses in or about 1950 live up to that intention, the results will represent well over half of the world's population (in terms of national totals). It would be nice to know how much of the world's agricultural land will be covered, but that is a piece of information that will have to come out of the Census itself.

The prospect is good both for a much more comprehensive inventory of the world's agricultural resources than has ever been accomplished before in one census period and for the enumeration of a considerable area that has not up to now submitted to the exactions of an agricultural census schedule.

The geographic scatter of the "committed" areas is such that a wide variety of types, both cultural and agricultural, should be present in the results. The list includes sovereign nations in all parts of the globe, nations in the process of achieving sovereignty, territories in trust and colonial areas; economically underdeveloped areas and highly industrialized areas. More specifically, the distribution is roughly as follows

* Paper read at the annual meeting of the American Sociological Society held in New York, December 28-30, 1949.

(in terms of land area): one-third of Asia excluding the U.S.S.R., two-thirds of Africa, three-fourths of Europe west of the U.S.S.R., four-fifths of the Western Hemisphere, and 99 per cent of Oceania. The big gaps are China and the U.S.S.R. If these two countries should participate, the World Census of Agriculture could account for about 85 per cent of the world's population and about 80 per cent of its land area.

COMPARABILITY AND QUALITY OF DATA

In its promotion of the World Census of Agriculture, the Food and Agriculture Organization of the United Nations has pursued four main objectives: (1) The development of a basic list of items to be investigated in all countries, with appropriate provision for variation in the agricultural patterns of the various countries, so that the data will give an adequate account of the world's agriculture; (2) the development of acceptable yet precise definitions and concepts with reference to these items, so that the data will be comparable; (3) the setting-up of classification and conversion schemes for tabulation and presentation of the data so that the statistics will be additive; and (4) the improvement of statistical methods and the training of technical personnel, so that the results will be reasonably accurate. In this work, FAO has cooperated with other international agencies and with technicians of the various governments. The census program, as now drawn up, is the outcome of experience and advice obtained all over the world. Even though the four objectives may not be fully achieved in all the results of the 1950 Census, there can be no doubt that significant progress will have been made in that direction.

CONTENT OF THE CENSUS

In the FAO publication, "Program for the 1950 World Census of Agriculture," the proposed content of the census is set forth, along with the approved definitions, explanations and table outlines. The items to be covered are presented in two lists, the Short List designed for the use of countries which find it necessary to restrict their census operation to a minimum, and the Expanded List for the use of countries which find it possible to obtain greater detail on a somewhat wider range of topics. Only a brief résumé of the subjects to be covered can be given here.

1. *Size of Farms or Agricultural Holdings (including all types of land in the holdings).* As specialists in this field well know, the size of

farms has an important bearing on economic efficiency and is closely bound up with other social and economic characteristics. A distribution of agricultural holdings classified into size groups can be very informative even in the absence of other data. This item is especially important in the World Census, because the list of subjects to be covered is necessarily limited and does not include, for obvious reasons, provision for data on farm income or direct enumeration of farm production.¹ It is primarily on the basis of these considerations that the recommended table outlines require that each item be tabulated by size of holding. The tabulation proposals allow for eleven size classes and so will permit a fairly detailed analysis with respect to this basic characteristic.

2. *Tenure.* This subject in combination with the foregoing is perhaps the one of greatest interest to the social scientist, since it permits some insight into the cultural and institutional aspect of a region's agriculture. Countries with unusual forms of tenure are asked to supplement the statistical materials with descriptions and explanations. Such phenomena as advanced fragmentation of holdings, predominance of rental or ownership, the plantation system, communal or collective exploitation of agricultural resources, etc., should be discernible from these data and should furnish some basis for sound generalizations concerning the relation between farm size and tenure on the one hand and productivity and general socio-economic welfare on the other.

For the benefit of those who insist that sociology is not a "welfare science," it should be pointed out that it is the boon—or possibly the bane—of sociology that it may classify anything, anything at all, as a social phenomenon and study this thing objectively and thoroughly. The sociologist need not be a promoter of welfare programs in order to study problems related to welfare or in order to study the concept of welfare, or even to construct an operating definition of welfare. One of the most interesting questions in the world is: What is welfare?—and it is hard to see how the social sciences can avoid becoming involved with this question.

3. *Land Utilization. (Crops, Livestock and Poultry Numbers.)* The third main subject of investigation is land utilization. It provides for the classification of the land in agricultural holdings into the categories: Arable land; land for

¹ In many countries, statistics of production will be obtained from other sources will not in all cases be available in cross-classification with size of farm.

growing trees, vines, and shrubs; permanent meadow and pasture; wood or forest land; and all other non-agricultural land. These data, like the rest, are to be furnished, for international purposes, in a classification by size of holdings. Arable land is to be reported by area under crops (with the area under principal crops specified) and area not planted to crops during the year preceding the census. Livestock and poultry numbers as of the day of the census are also to be reported, again by size of holding.

This information will allow characterization by type of farming, degree of diversification, land use, etc., all important components of a thorough sociological analysis. With a geographic break, these data can be utilized in delineating type-of-farming areas either with or without regard to national boundaries. In the United States, this has proved to be an extremely useful analytical device since it permits the study of other characteristics of the areas in the light of the prevailing types of farming.

In addition, where information on yields and production is obtained in the census, measurement of productivity of land by size of farm will be possible. Otherwise, productivity will be obtainable only for all holdings combined in a given country.

In the interpretation of these materials, the social scientist with the appropriate specialty is particularly well equipped to detect misleading facts, even in such apparently straightforward data as those on crops and livestock. With his cultural insight, he can avoid such errors of interpretation as, for example, mistaking cattle for livestock in certain parts of Africa where, it is said, cattle are used, not as livestock, not as a source of food, but as money, as a symbol of prestige. As a result of not being eaten or milked or used in any directly productive way, but having to be fed and tended, these cattle have become actually a source of poverty while serving as a symbol of wealth.

One signal contribution of the data on land utilization will be an increased knowledge of the location and amount of arable land in the world. An acute question with FAO is whether the world has the necessary resources to support the people born into it in an adequate fashion for a reasonable length of time. The answer to this question does not of course lie solely in the determination of how many hectares of arable land exist, but that is certainly one factor that needs to be considered. Other factors, to name only a few, are the fertility of the land, the extent to which additional land can be brought

into cultivation, improvement in farming methods, the utilization of other sources of food supply, and the very basic one of social organization to bring these factors into full play.

Perhaps the question as to whether the world can feed its people has only the answer that mankind decides to give it. FAO is naturally resolved to bring about a positive answer if possible. The social scientist, as a scientist, cannot be expected to take the same partisan interest in the problem. However, he can be expected to take at least an impersonal interest in it, and can perhaps on the basis of the data and by virtue of his objectivity along with his awareness of the nature and weight of cultural factors, bring to light further considerations that will be of value in the implementation of a program designed to feed the world and raise levels of living.

4. *Agricultural Technology.* The fourth subject of investigation is agricultural technology. The Short List undertakes merely to ascertain whether or not animal power (excluding human animal power) was used on the farm during the preceding year and whether or not mechanical power was used. This will permit the classification of holdings into 4 power groups (no animal or mechanical power; animal power only; animal and mechanical power; mechanical power only) each cross-classified by size, and the whole array giving a rough measure of the degree of mechanization.

The Expanded List calls for a much more thorough investigation and contains items on types of animal power, use of electric power, water power, tractors, farm machinery, etc. In addition, data on the use of fertilizer and soil dressings and on irrigation and drainage are called for.

The techniques of agricultural production are fully as important as the amount and fertility of arable land. Indeed, the level of agricultural technology is one of the best single indicators of the general cultural level of a people. The application of mechanical power, fertilizer, irrigation or drainage can transform previously unusable land into valuable agricultural land, as well as enhance the fertility of land already under cultivation and can in due course transform the culture itself. In 1960 or thereabouts, when the next World Census is taken, we can perhaps actually measure the progress that has been made along these lines. As to the social research implications, it is obvious that the dynamics of an increasing agricultural production reside primarily in agricultural technology. One may go

still further, and say that the dynamics of society reside in agricultural technology at least up to the point where a society's productive capacity is more than enough to supply its needs. How else were the first industrial workers, the first builders of the city, freed from the necessity of working on the land? What is history but a process of improvement in agricultural efficiency whereby increasing proportions of the people could congregate, travel, invent, industrialize, urbanize, civilize, and finally become sociologists?

While it is the job of agricultural science to estimate physical potentials, it is the job of social science to take note of these findings and expose the problems of social adjustment that must accompany the adoption of new methods or, in effect, to estimate social potentials. In connection with programs of technical assistance to underdeveloped countries, there is a growing awareness of the importance of social and cultural factors and a developing tendency to seek the advice of social scientists in the planning and execution of such programs. Needless to say, the social sciences can supply the needed information only on the firm foundation of exhaustive research.

Thus, these data from the Census of Agriculture can be made to contribute both to our agricultural knowledge and our social understanding; they can become, in both capacities, a valuable guide to programs like those of FAO and the United Nations.

5. *Population.* The fifth subject for investigation in the World Census of Agriculture is the agricultural population and labor force. The Short List provides for reporting simply the total number of persons residing in operator households. The Expanded List provides for a count of persons residing on farms, for information on age, off-farm work and nonagricultural occupations of farm operators, and for employment on agricultural holdings by broad age groups (over and under 15) and sex, and by "industrial status" (i.e., paid workers and unpaid family workers).

Neither of these lists pretends to represent an adequate amount of demographic information. Although data on size of operator families, on farm population and on farm workers obtained in an agricultural census are useful for certain types of analysis, the information is too limited for most purposes. A more prolific source is the census of population in which there is not only more detail on the characteristics of the agricultural population itself (preferably linked

to the census of agriculture so that results can be collated), but also comparable detail on the other segments of the population.

The latter point is a particularly important one from the sociological point of view. Agriculture is not a separate entity. The improvement of food supplies on a sound and sustained basis is tied in with the whole complex of social and economic development. Agriculture and industry develop together, as each is heavily dependent upon the other. Similarly, agricultural and non-agricultural people, rural and urban people, are not two worlds but one interacting and interdependent world. The process of specialization and division of labor, far from slicing a society into parts, actually knits it together in ever-increasing interdependence.

Data on the agricultural population therefore need to be set in the frame of the total population. Agricultural statistics need to be supplemented by other statistics. Rural society needs to be viewed in the perspective of its urban complement. The social scientist is in the best position to recognize these necessities and to interpret results drawn from both agricultural and population censuses along with those from other sources.

THE DEVELOPMENT AND STATUS OF VITAL STATISTICS ON MARRIAGE AND DIVORCE*

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Vital statistics on marriage and divorce in the United States are fragmentary and inadequate. Yet, generalizations are sometimes made which the limited data hardly warrant. At the same time, it is also true that even the scattered data available are not always fully utilized. This paper summarizes the history and present status of vital statistics on marriage and divorce, and some of the plans and problems in this field.

The first federal report on marriages and divorces in the United States covered the years 1867-1886, and was "practically complete as re-

* Adapted from a paper read at the annual meeting of the American Sociological Society held in New York, December 28-30, 1949. The author is chief of the marriage and divorce analysis branch, National Office of Vital Statistics, Public Health Service, Federal Security Agency; and lecturer in sociology, American University. He is indebted to Sarah Lewit for assistance in this report and the project it describes.

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gards divorces," but "thoroughly incomplete and unsatisfactory so far as marriages are concerned."¹ It presented numbers of marriages for about two-thirds of the counties, numbers of divorces by county, and various detailed divorce statistics, such as causes, duration of marriages, etc., by state and year. The next federal report, published in 1908-1909 by the Bureau of the Census, dealt primarily with the 1887-1906 period, and also summarized some of the 1867-1886 data. For 1887-1906 it included numbers of marriages for more than nine-tenths of the counties of the United States, numbers of divorces for almost all counties, and some detailed divorce statistics by state and year. A report covering the period 1907-1916 was planned, but owing to war conditions, the scope of the report was confined to the single year 1916. It presented numbers of marriages and divorces by county and some detailed divorce statistics by state. The program was resumed with a report for 1922, and for 11 years annual reports following the general pattern of the 1916 report were published; they were discontinued after the 1932 report.²

In 1940, the Bureau of the Census, through its Vital Statistics Division, initiated a new program of marriage and divorce statistics. Numbers and rates from earlier studies were summarized, with new material added; and collections and estimates of 1937-1940 state and national numbers were made and rates computed.³ In addition, a project was started to obtain detailed statistics from marriage and divorce collection areas, each area comprising in general those states which could furnish copies of their records from their central state vital statistics offices, following the pattern used earlier in the development of the birth-registration and death-registration

areas.⁴ This project was discontinued owing to the second world war; but some data for the 1939-1940 period were published.⁵

Thus, during three national emergencies—the first and second world wars, and the depression of the 1930's—programs of marriage and divorce statistics were discontinued. During the last war, the Federal Home Loan Bank Board began to collect for administrative use the monthly numbers of marriage licenses in major city areas. The Division of Statistical Standards of the Budget Bureau arranged for this project to be taken over by the Bureau of the Census. Thereafter, in 1944, the Bureau of the Census through its Population Division resumed a limited program of marriage and divorce statistics. In May 1946, the project was transferred to the Vital Statistics Division; and in July 1946, the Vital Statistics Division was transferred from the Bureau of the Census of the Department of Commerce to the Public Health Service of the Federal Security Agency, and was designated the National Office of Vital Statistics. Since the resumption of this project in 1944, reports have been published⁶ on three series of data: (1) Monthly

¹B. M. Cohen, "Centralized Collection of Marriage and Divorce Records and Their Uses," *American Journal of Public Health*, Vol. 31, No. 8, August 1941.

²Bureau of the Census, "Preliminary Marriage Statistics for 26 States: 1939"; "Preliminary Marriage Statistics for 28 States: 1940"; "Marriage Statistics—Resident Brides and Grooms by Age: Collection Area, United States, 1940"; "Marriage Statistics—Resident Brides and Grooms by Previous Marital Status: Collection Area, United States, 1940"; "Marriage Statistics—Marriages Occurring in Collection Area by Place of Residence of Brides and Grooms, 1940"; "Marriage Statistics—Marriages by Racial Type and by Age of Resident Groom, by Age of Bride: Collection Area, 1940"; "Marriage Statistics—Resident Brides by Age and Race: Collection Area, 1940"; "Divorce Statistics—Divorces by Cause, Party to Whom Granted, and Plaintiff: Collection Area, 1939," *Vital Statistics Special Reports*, Vol. 15, Nos. 8 and 19, Vol. 17, Nos. 9, 13, 14, 22, 23, 25, 1941-1943.

³Bureau of the Census, Series PM-1, PM-2, PM-3, and PM-4, 1944-1946. National Office of Vital Statistics, *Monthly Marriage Report*, PM-4, and new series, Vols. 1-3, 1946-1949; *Quarterly Marriage Report*, Vols. 1-3, 1946-1949; *Monthly Vital Statistics Bulletin*, Vol. 12, 1949; *Vital Statistics Special Reports*, Vol. 23, No. 9, Vol. 27, No. 10, Vol. 29, No. 4, and Vol. 31, No. 16, 1946-1949; *Vital Statistics of the United States*, 1946, Part I, pp. LXIX-LII, 1948; *Vital Statistics of the United States*, 1947, Part I, pp. XLVIII-LII, 1949.

¹U. S. Commissioner of Labor, *A Report on Marriage and Divorce in the United States, 1867 to 1886*, 1074 pp., 1889. This document, and those mentioned in footnotes 2, 3, and 5, are no longer available for distribution, but can be consulted in many libraries.

²Bureau of the Census, *Marriage and Divorce, 1867-1906*, Part I, 535 pp., Part II, 840 pp., 1908-1909; *Marriage and Divorce, 1916*, 47 pp., 1919; *Marriage and Divorce*, annual reports, 1922-1932, 30 to 90 pp. each, 1925-1934.

³Bureau of the Census, "Marriage and Divorce Statistics, United States: 1887-1937"; "Estimated Number of Marriages, by State: United States, 1937-1940"; "Estimated Number of Divorces, by State: United States, 1937-1940," *Vital Statistics Special Reports*, Vol. 9, No. 60, Vol. 15, Nos. 13 and 18, 1940-1942.

marriage license figures for major cities or their counties (estimates have been made back to 1939 from data of the Federal Home Loan Bank Board, the Metropolitan Life Insurance Company, and *Jewelers Circular-Keystone*, a trade journal); (2) monthly marriage license figures beginning with 1944 for states and the nation; and (3) annual totals of marriages, substituting licenses for some states, and divorces for as many states as available, with national estimates.

Meanwhile, over a period of years, national estimates were made for years not covered by the foregoing studies. The Bureau of the Census, in its annual marriage and divorce report for 1926, published national estimates for the years 1907-1915 and 1917-1921. After 1932, when no national marriage and divorce data were available, two sociologists collected figures from a group of states and published 1933-1937 national estimates.⁷ Their estimates remain our only national figures for 4 years, 1933-1936. In 1946, the National Office of Vital Statistics estimated national marriage totals for the years 1867-1906 from the earlier incomplete data. Thus, national figures or estimates are available for every year since 1867.

On the basis of state and national numbers of marriages and divorces, crude rates (per 1,000 population) are computed. Recently the Population Division of the Bureau of the Census prepared special population estimates (not for publication) for use in computing marriage rates per 1,000 unmarried females aged 15 and over, and divorce rates per 1,000 married females aged 15 and over.⁸

Besides these federal reports on occurrences, annual detailed statistics are published by some state health departments.

Even if annual numbers of marriages and divorces were available for all states, the needs for detailed statistics, some of which were published for earlier years and some of which have never been available, would be unmet. Such details as age at marriage, age at divorce, previous marital status, duration of marriage prior to divorce, number of children affected by divorces, legal grounds ("causes") of divorce, rural-urban differences, and others are required for analysis of the changing family.

Many states have no systems of centralized

records of marriages and divorces in their vital statistics offices (such as they all now have for births and deaths) which would pave the way for state and national statistics. Sociologists seeking information concerning these occurrences, as well as individuals needing copies of such records for legal, welfare, and personal uses, may be confronted with the hopeless task of inquiring among hundreds of offices.

The same situation once existed with respect to mortality and natality records and statistics in the United States. After years of cooperative state-federal efforts, birth and death data for the entire nation first became available for 1933.

It is encouraging to note that an increasing number of states are providing by law for integrating their marriage and divorce records and statistics with other vital records and statistics in the vital statistics offices of the state health departments. About three-fourths of the states now have some such provision for marriages and about one-half for divorces, although not all of these have programs yielding detailed marriage and divorce statistics. The American Sociological Society at its 1947 annual meeting took action to express its concern over the need for more adequate marriage and divorce data.⁹ Several other professional groups have taken action also. A Joint Resolution was recently introduced in the United States Senate by which, if passed, the Congress will request favorable consideration and action by the states for marriage and divorce registration and statistics. Adequate national vital statistics of marriages and divorces probably will not become available until every state has a centralized system of records and statistics of these events.

But a long-range development will not meet the needs of the present or of the immediate future. As an interim measure, a cooperative state-federal program has been initiated, within the limitations of available resources, to present more than mere numbers of occurrences for a group of states. The state vital statistics officials of several states are furnishing some tables of 1948 data for consolidation and publication.¹⁰ Tables on marriages will include data: (a) by month; (b) by age of bride, by age of groom; (c) by first marriage or remarriage, by age groups; (d) by age groups and race; and (e) by residence or nonresidence in state of marriage. Only a few states can furnish all of the tables;

⁷ S. A. Stouffer, and L. M. Spencer, "Recent Increases in Marriage and Divorce," *American Journal of Sociology*, 44 (January 1939), 551-554.

⁸ National Office of Vital Statistics, *Vital Statistics Special Reports*, Vol. 31, No. 16, pp. 221-222 and table 2, 1949.

⁹ See *American Sociological Review*, XIII (April 1948), 205-207, and XIV (February 1949), 135-136.

¹⁰ To appear in *Vital Statistics Special Reports*, Vol. 35.

others will furnish one or more; and many states can furnish no tables.

Some 1948 divorce tables will be presented for several states (not the same states as in the marriage tables, unfortunately): by month; by legal grounds; by party to whom granted; and by duration of marriage.

There is being published also, for the first time since the report for 1932, marriage data by county for the entire nation, and divorces by county for about 25 states. However, the marriage data represent licenses (rather than marriages) for many states; marriages by county of license issuance for a few states; and marriages by county of occurrence for less than half the states. Finally, it is planned to publish monthly numbers of divorces on a current basis for a group of about 15 states.¹¹

These projects will leave much to be desired. The limited tables of 1948 detailed data for a varying group of states may not represent the national picture, and should be used with considerable caution. Many users might prefer a different presentation of the data or the inclusion of additional items. The problem is to find the "least common denominator," i.e., those 1948 tables which are obtainable in reasonably comparable form from the participating states. A few state offices have marriage and divorce statistics in much greater detail, and researchers can of course obtain data from such state offices as in the past.

It is hoped that this project will continue for 1949 data and for future years, with more detailed data and an increasing number of participating states. Even with advances beyond this meager beginning, limitations and problems will remain. One example is the subject of *residence*. Vital statistics by place of occurrence, the only kind now available for marriages and divorces, have limited usefulness, which shows up sharply in the crude rates by state. The treatment of basic birth and death data has for years stressed

rates by place of residence. In the marriage and divorce program discussed above it is not feasible to attempt interchange of nonresident occurrences, which would be necessary to obtain residence data. However, some aspects of the residence problem would continue even if all states were included in marriage and divorce statistics and interchange of nonresidence records was complete. The definition of and legal requirements for residence vary from state to state. Presumably no divorces occur except to "residents," as defined by the state accepting jurisdiction; and on marriages, it is not known how accurately out-of-state participants report their residence. No immediate solution of this problem is in sight.

In this and other respects, our vital statistics on marriage and divorce at present and in the near future leave many questions unanswered concerning the characteristics of persons getting married or divorced, the "real" causes of divorce in contrast to "legal grounds," etc. There are other areas of family formation and family dissolution which are outside the scope of vital statistics. For example, there are an unknown number of common-law marriages in some states, of matings outside the law, and of separations and desertions which do not lead to court actions. Obviously these are significant, but it is unlikely that vital statistics, which deal with registered events only, can throw light on these occurrences.

Of course, facts on marriage, divorce, and the family are derived not only from vital statistics but also from statistics on marital status and other population data obtained by enumeration and available from the Bureau of the Census, and from other surveys and studies by private and public investigators. No one type of data can provide all the answers in this field, and the various approaches complement each other. There is great need for adequate data on a regular basis, fullest utilization of existing and future data, and more coordinated effort in seeking and studying the facts not available from routine data.

¹¹ To appear in *Monthly Vital Statistics Bulletin*, Vol. 13, Nos. 2ff.

COMMUNICATIONS AND OPINION



REPLY TO "A CATHOLIC PROTEST"

To the Editor:

I do, indeed, plead guilty to the offense of offering no evidence and no argument for my use of the terms "fascistic" and "totalitarian" in referring to the psychology of the Catholic Church in my recent article, as The Reverend J. E. Coogan, S.J. charges.¹ It seemed quite unnecessary for the audience I was addressing and would, furthermore, have given undue emphasis to a wholly incidental point. Since I am challenged, however, I feel obligated to offer the evidence and documentation called for.

The following quotation is from the article on "Fascism" by Erwin von Beckerath of the University of Cologne in the *Encyclopaedia of the Social Sciences* (Volume 6, p. 136). In all cases the words "Catholic Church" have been substituted for "Fascist party." Semantically defiled words like "arbitrary," "cynical," and "machine" have been deleted. Some minor changes have been made, such as substitution of "the Pope" or "the Vatican" for Mussolini, etc. The substituted-for words are included in parentheses; interpolated terms are in brackets.

The Catholic Church (Fascist party) . . . seeks through a host of auxiliary groups . . . to extend to all spheres of modern life. [The totalitarian principle]. Concentration of authority and hierarchy of membership imply that all the reins of church (party) activity come together eventually in the hands of the Pope (Mussolini). All nominations are traceable directly or indirectly to him, and throughout the varied ramifications of the church organization (party machine) the will of the leaders as a general rule prevails over the component organs. The Vatican (Mussolini) controls the decisions in the great church councils (Great Fascist Council); the officers (secretaries) of the dioceses and parishes (provincial and local associations) control the activities as well as the membership of the governing bodies. It is a consequence of the aristocratic con-

¹ *American Sociological Review*, XV (February, 1950), 110. The sentence he objects to is as follows: "Its [the Comtean *Positive Polity's*] essentially fascistic and totalitarian psychology, copied from the Catholic Church, seemed to them [the followers of the *Positive Philosophy*], in spite of Comte's insistence to the contrary, a painful *non sequitur*."

cept of the élite . . . that the selection of leaders all along the line takes place through nomination from above. The church (party) hierarchy does not proceed upward from the will of the individual voters . . . but has its origin among the leaders, whence it permeates downward. [Doctrine of the élite]. An inevitable corollary of this authoritarian hierarchical structure is the unqualified duty of obedience incumbent upon all members. [Principle of obedience].

The above passage in its original form describes a characteristically fascist organization, the Italian Fascist Party. The principles there illustrated exemplify what is meant by the term fascism. We may now illustrate the corresponding principles of the Catholic Church, all taken from official Catholic documents edited and summarized by Philip Hughes in *The Popes' New Order* (Macmillan, 1944. Imprimatur Cardinal Francis J. Spellman).

The totalitarian principle. (" . . . to extend to all spheres of modern life").

Catholic unions should be formed where this is possible. . . . In the matter of the organization of such Catholic Trade Unions, it should not be forgotten that religion is all important. Provision should be made for the instruction of members in the Church's social teaching. (Pope Pius XI, *Quadragesimo Anno*, 1931, *loc. cit.*, p. 225.)

To watch over the entire education of her children . . . is the Church's inalienable right. (Pope Pius XI, *Divini Illius Magistri*, 1931, *ibid.*, 195).

For Catholics, merely civil marriage 'cannot be more than a rite or custom introduced by the civil law.' (Pope Leo XIII, *Arcanum*, 1886, *ibid.*, 173)

As to the Church's care for the poor, this has been a distinguishing mark of her activity from the beginning. (Pope Leo XIII, *Rerum Novarum*, 1891, *ibid.*, 217).

It is Our will that priests consider it as one of their duties to give as much of their life as possible to social science and social action, by study, observation and work. . . . Let no member of the clergy suppose that activity of this kind is something foreign to his priestly ministry because the field in which it is exercised is economic. It is precisely in this field that the eternal salvation of souls is imperilled. (Pope Benedict XV in a letter to the Bishop of Bergamo, 1920, *ibid.*, p. 226).

Catholics should play their part 'in the business of municipal administration.' It is for the public good that they should endeavour to bring about the

establishment of religious education. Catholics should also extend their efforts to the field of national politics. 'If they hold aloof, men whose principles offer small guarantee for the welfare of the State will the more readily seize the reins of government.' (Pope Leo XIII, *Immortale Dei*, 1885, *ibid.*, p. 101).

Denial of popular authority ("concept of the élite").

Authority and obedience to authority . . . are in the nature of things. No man can succeed in so freeing himself that he needs not to obey someone. Society needs a chief to rule it, if it is to achieve the purpose for which it exists. (Pope Leo XIII, *Diuturnum Illud*, 1881, *ibid.*, 77-78).

[It is all wrong to believe that] whatever authority the State possesses comes from the people only, and the supreme guide of the State is the collective reason of the community, [that] whatever the majority decide, is right, is the source of rights, and the source of obligations. (Pope Leo XIII, *Libertas Praestantissimum*, 1888, *ibid.*, 114 *passim.*)

Principle of obedience. (" . . . the unqualified duty of obedience. . . ")

[Religious.] Union of minds requires not only a perfect accord in the one Faith, but complete submission and obedience of will to the Church and to the Roman Pontiff, as to God Himself . . . [and among the duties of Christians is] that they allow themselves to be ruled and directed by the authority and leadership of the bishops, and above all of the Apostolic See. (Pope Leo XIII, *Sapientiae Christianae*, 1890, *ibid.*, 129).

[Political.] For in giving obedience . . . citizens understand . . . that they are subjects to, and must obey, rulers because in some sense rulers reflect the image of God 'to serve whom is to reign.' (Pope Leo XIII, *Diuturnum Illud*, 1881, *ibid.*, p. 81).

Another element in fascism as it manifested itself in Italy was the corporative state which was not, however, necessarily inherent in its philosophical principles, as were the doctrines illustrated above. The Catholic Church is not itself a corporative state, but it did sanction this form of organization in Italy. Pope Pius XI advocated "the organization of all who work—in whatever capacity—in any particular trade, into a single professional corps. Men would then be divided, not as employers and workmen, but according as they followed, in one capacity or another, this or that particular trade or profession" (*Quadragesimo Anno*, 1931, *loc. cit.*, 239). He ended "this exposition of the new State, the State adapted to the task of perpetuating a better social order, with a review of such a state recently established, and with a

criticism of it. This state is, of course, Italy as Fascism reorganized it" (*ibid.*, p. 241). The Pope's criticism was not aimed at the principles on which fascism in Italy rested but at its excessive substitution of the state and party for private initiative, its bureaucratic and political character, and its subservience to particular political aims (*ibid.*, p. 241). He recognized its general advantages (*ibid.*, p. 241).

The Encyclical *Non Abbiamo Bisogno* by Pope Pius XI (1931) which protested some of Mussolini's attacks on the Church in no way criticized the principles of fascism. "Note well," we are reminded, "the pope says in effect, that it is not the Fascist party as such that is condemned, but only 'those things in the program and in the activities of the party which have been found to be contrary to Catholic doctrine and Catholic practice, and therefore irreconcilable with the Catholic name and profession'" (*ibid.*, p. 153). It was as a totalitarian competitor for the allegiance of the faithful that Italian fascism was attacked.² As a matter of fact, "although the relationship of Fascism to the Catholic church is in many respects extremely complicated, it is unquestionably true that the two movements share in common, to a greater degree than at any time since the Risorgimento, many features—as, for example, an antipathy to liberalism and a close contact with the middle classes, especially the agrarian" (von Beckerath, *loc. cit.*, p. 138).

The situation was similar in the case of the Church's protest against the Nazi version of fascism, where the doctrine of the élite took the form of a Herrenvolk concept and the fuhrer principle. Unlike Einstein, I have never despised the Church, but like him I honor and admire it for its stand against the excesses of Nazi fascism; and the fact that this stand was taken in self-defense in no way detracts from its greatness. It would take more space than is warranted here to document the statement that the opposition of the Church to German fascism was in self-defense; I refer the reader to the Encyclical of Pope Pius XI entitled *Mit Brennender Sorge*, 1937. Again, as in the case of Italy, there was no criticism of the principles of fascism but only of its brutal practices.

In this connection intellectual honesty and

² "It would be . . . unrealistic . . . to forget that both groups [Italian Fascists and Roman Curia] deem it from time to time expedient to pose in the eyes of the world as bitter adversaries" (von Beckerath, *loc. cit.*, p. 138).

integrity require correction of Father Coogan's implication (by his capitalization of the word "church") that the statement by Einstein which he quotes refers to the Catholic Church alone. Einstein was referring to the Christian Church generically; he "meant all the churches," Protestant as well as Catholic. (Documentation: personal letter from Dr. Einstein's secretary, April 13, 1950).

Because Father Coogan loves his Church he sees nothing to criticize in the above statements of its principles and practices. They do not seem fascistic to him because the term "fascism" has become irrevocably associated with its ruthless manifestations under Mussolini and Hitler, where it was controlled by a cynical leadership. The term has become a derogatory epithet and therefore ceased to serve as a vehicle for honest, straightforward communication. It is almost impossible for most people to conceive that fascist organizations might be humane with a paternalistic rather than a cynical élite, like the one proposed by Comte. Perhaps it was the fact that I called attention to this latter type of fascism that led Father Coogan to label me as "characteristically fascistic."

I wish to emphasize in closing that in referring to the psychology of the Catholic Church as fascistic I was in no sense referring to the Catholic religion, i.e., to its religious faith, creed, dogmas, beliefs, or theology. I hope the documentation here presented fulfills Father Coogan's demands.

Pennsylvania State College JESSIE BERNARD

COMMENTS ON PARSONS' "THE PROSPECTS OF SOCIOLOGICAL THEORY"

To the Editor:

Professor Parsons, in his presidential address,¹ has again raised the perennial and pressing problem concerning the place that general theory should have in sociology, especially its relation to research. Of primary importance is its relation to theories of the middle range.

While respecting and appreciating Parsons' important contributions to theory, I must share certain misgivings as to where his present thought will lead him. General theory, in sociology, at present consists of an articulation of concepts. The problem of the theoretician, therefore, is the formulation of adequate concepts, plus the articulation of them in such a way that empirical hypotheses may be derived

from them. This, however, means that concepts must be continuously tested and refined through empirical research. A satisfactory articulation of concepts is impossible if they are not empirically tested and refined. This was the great failing of the early system builders in sociology, and one that Parsons may fall victim to: a complete, logical, and impressive system is constructed that proves to be of little value in empirical research.

Perhaps the basic fault in Parsons' attempt at system building is his conception of the desirable system as an *ideal* state in which most hypotheses can be derived from the theoretical system. Though he leaves room for modification, he does not appear to allow for basic changes. This stems from the conception of scientific truth as a closer and closer approximation of an absolute truth. The postulation of an absolute truth is unwarranted in any science. The most adequate conception of scientific truth that has been developed so far is that it consists of the *coherence* of a set of propositions, the propositions having an empirical foundation. Scientific progress consists of the development of more and more general and adequate propositions that are coherent with each other, and that are empirically founded. Whether this means an approximation of an absolute truth can never be scientifically demonstrated. This implies that there are different levels of truth, and that any system of theory will be rejected at some future date. I am reminded of a geology instructor I had once who decided not to enter physics because all its basic problems had been settled. This in the beginning of the present century!

General theory must never be more than one step ahead of theories of the middle range. It must provide hypotheses for empirical research at the level of the middle range. In time, what is now the level of general theory will become the middle range. For example, Parsons' concepts of universalism and particularism are interesting and fruitful. But now we must have research such as Stouffer is conducting which will test and refine these concepts before we can try to use them to build new theory on higher levels of abstraction. The manner in which theory and research are interdependent has been stated excellently by Merton, so there is no need to pursue this further. As long as general theory remains in contact with theories of the middle range, it will be valuable. Let us not try to enlarge the islands of knowledge on the sociological map before we are sure that these islands are not mirages.

Triple Cities College

IRVING CRESPI

¹ *American Sociological Review*, XV (Feb. 1950), 3-16.

OFFICIAL REPORTS *and* PROCEEDINGS



EMPLOYMENT BULLETIN

The first issues of the Society's *Employment Bulletin* appear to have been eagerly received; and the Executive Office is forwarding hundreds of letters each month, thus putting prospective employers and employees in touch with each other. This device can be really successful, however, only where it becomes widely accepted and is used generally for the listing of vacancies as well as of applicants in the field. The listings are anonymous, and all names are held in the strictest confidence. Issues of the Bulletin will appear as frequently as justified by the demand.

COMMITTEE MEMBERSHIP

The composition of the standing and other committees of the American Sociological Society for the current year, in addition to those previously announced, is as follows:

Committee on Research

Paul Lazarsfeld, *Chairman*
W. Edwards Deming
Raymond V. Bowers
Nathan L. Whetten
T. C. McCormick

Committee on Relations with Sociologists in Other Countries

Louis Wirth, *Chairman*
Robert C. Angell
Raymond V. Bowers
E. Franklin Frazier
Philip M. Hauser
Robert Lynd
Hans Speier
Conrad Taeuber
Carl C. Taylor

Committee on Papers for Annual Meeting 1950

Robert E. L. Faris, *Chairman*
A. B. Hollingshead
Robert F. Winch

Committee on Budget and Investment

Donald Young, *Chairman*
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Leland C. DeVinney
Carl Hovland
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Theodore Newcomb
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Committee on Statistics

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NEWS AND ANNOUNCEMENTS



International Sociological Association World Congress. A World Congress of Sociologists will be held in Zurich, Switzerland, September 4-9, 1950. The general subject of the Congress is *Sociological Research in Its Bearing on International Relations*. The program of the meetings will include original studies and critical evaluations of research on nationalism and national characteristics and attitudes, displaced persons, immigrants and their adaptation, ethnic groups within nations and their influence on foreign relations, international communication, tensions affecting international understanding, and problems of international organization.

The Congress is under the auspices of the International Sociological Association and is held in cooperation with the United Nations Educational, Scientific, and Cultural Organization.

Decision to hold this Congress was taken at a preliminary meeting at Oslo in September 1949 at which the International Sociological Association was organized and in which representatives of twenty-two countries participated. The sessions of the World Congress of Sociologists will be held simultaneously with the meeting of the International Sociological Association. Whereas the Congress will be devoted primarily to scientific discussions, the meetings of the council and the executive committee of the International Sociological Association will be concerned with the perfection of the organization established at Oslo and election of permanent officers, the reports of committees and the development of plans for international cooperation. A special feature of the Congress is a symposium jointly sponsored by the International Sociological Association and the International Political Science Association on the relations between racial and ethnic divisions within a country and its foreign relations.

The general aim of the Congress is to re-establish professional contacts among sociologists of various countries of the world for the advancement of sociological teaching and research and to explore the potential contributions of sociology to the objectives of world understanding and world integration.

Those desiring to contribute papers to the Congress are invited to send them to Mr. Eric Rinde, the Provisional Secretary of the International Sociological Association, Grev Wedelspl. 4, Oslo, Norway, before July 15, 1950. All inquiries regarding the Congress should also be directed to him.

The sponsors of the Congress regret that because the annual meeting of the American Sociological Society in Denver will take place at about

the same time as the Zurich Congress, many American sociologists will not be able to attend the Zurich meetings. It is also regrettable that another Congress of sociologists has been announced for September 1950 in Rome. The Zurich Congress and the meetings of the International Sociological Association have no relationship whatever to the contemplated Rome meeting. All American sociologists who are planning to be in Europe or who desire to attend the meetings are cordially invited.

The Hebrew University, Jerusalem. After the resumption of studies at the end of hostilities, the Department of Sociology, headed by Prof. M. Buber, has also renewed its activities. Special emphasis has been laid on the development of research which was begun before the war but not continued during the hostilities. The Research Seminar in Sociology, which has begun to work on the problems of culture-contact between the Oriental Jews and the modern Jewish community, has expanded its activities and research projects. The work of the seminar is directed by Dr. S. N. Eisenstadt. At present the Research Seminar is working on three research projects:

1. Absorption of immigrants. This is the largest research project, undertaken in conjunction with the Jewish Agency. Its main problems are to investigate the different types of absorption and the social and psychological processes determining these types of absorption. The project is based on techniques combining different aspects of anthropological field-work, participant-observation, and open-end interviews. It is conducted in eight different settlements of new immigrants. The settlements were chosen so as to represent different types of immigrants and socio-economic structure.

2. Sociological analysis of the communal settlements. This project comprises the analysis of the social structure of the communal settlements and the main trends of development. Special emphasis is being laid on the relation between private life and the economic-communal organization, the relation of the settlements to national life, the development of democratic charisma, and problems of democratic self-government in the communities.

3. The relation between different family types and sociopsychological problems of adolescence and youth. The purpose of this project is to elucidate the relations between different types of family structure and participation in youth movements, problems of juvenile delinquency, and the impact of family structure on personality development.

The first part of this study, a comparison of age-groups in the communal and cooperative settlements has been completed and will be published shortly. It is hoped to resume also the studies on culture-contact among the Oriental Jews. Within the family project, special emphasis will be laid on the problems of Oriental-Jewish families. The Seminar plans to publish the result of its work either in scientific periodicals or in special forms (memoranda, books etc.).

The Israel Institute of Applied Social Research, the first of its kind in the young State, has been set up as a result of the expansion of the work of the Israel Institute of Public Opinion Research to other fields of a sociological and sociopsychological nature.

Besides current nation-wide opinion polls, the Institute is now engaged in a study of adjustment problems among new immigrants. Another extensive and intensive study of problems, plans, and attitudes of Israel's youth is in preparation. Among other subjects which the Institute has been commissioned to analyze are: the experience of dwellers in the new housing projects, radio listening, and juvenile delinquency. Projects are accepted from the various government departments and from other civic bodies, as well as market research for private firms and organizations. Basic social research and experiments in survey techniques will be important features of the Institute's theoretical work. It also cooperates in joint projects with scientific organizations in other countries.

The first issue has appeared of the quarterly bulletin, *What Israel Thinks*, dated Spring, 1950. Published in the English language, the bulletin is designed to give summaries of the Institute's reports on its continuing opinion surveys, as well as news about social research in Israel, for the non-Hebrew reader. The more comprehensive sociological and psychological studies of the Institute will be published separately in monograph form in Hebrew and in English.

Annual subscription to the quarterly bulletin is \$2.00, with a price of \$15.00 for the annual subscription to the regular opinion studies in Hebrew.

Dr. Louis Guttman has recently resigned his post at Cornell University in order to continue as scientific director of the enlarged Institute, while Dr. Uriel G. Foa continues as executive director. Communications should be sent to the new address: The Israel Institute of Applied Social Research, Sergei Building, Melisande Way, Jerusalem, Israel.

The Institute of Sociology (England) is arranging a Course in Sociological Field Studies of *The English Town* and *The English Countryside Today*, with special attention to the needs of students from the United States and Overseas, working in conjunction with British students. The primary aim of

the course, which covers two weeks beginning July 17, is to give opportunity for learning, by practical experience, the methods of field study. The director will be Alexander Farquharson, General Secretary of the Institute of Sociology. The headquarters for the course will be Le Play House, Ledbury, Herefordshire. Students wishing to attend should apply to (Mrs.) Dorothea Farquharson at this address. The inclusive fee for American students is 10 guineas a week, which covers tuition, facilities at Le Play House, living accommodations, and transport for group expeditions.

University of Stockholm. In September 1950 a special course for American students sponsored by the American-Scandinavian Foundation will be held at the University of Stockholm for the fifth consecutive year. The course, approved by the Veterans Administration, is designed primarily for graduate students although a limited number of students with at least two years of college will be accepted. The tuition cost for the coming year will be about \$100.

The curriculum centers on the economic, political and social scene but provides a good background for other fields of study as well. These courses are conducted in English. At the same time there is intensive instruction in the Swedish language so that by the second semester students are able to attend regular university lectures and make use of Swedish sources in preparation for the writing of a required thesis in a field of particular interest to him.

The students are members of the Student Association with the same advantages and responsibilities as the Swedish students. For the most part they live in Swedish homes and learn the Swedish way of life. During the year they have opportunity to travel.

Applications should be directed to the American-Scandinavian Foundation, 116 East 64th Street, New York 21, N.Y.

Social Science Research Council. In order to recapture the summer recess for purposes of hard study and research rather than routine teaching, the SSRC has been granted \$100,000 by the John and Mary R. Markle Foundation to finance the holding of inter-university summer seminars over a three-year period beginning in 1950. A Seminar on Old Age Research will be held this coming summer at the University of California at Berkeley, under the chairmanship of Harold E. Jones. Participants, drawn mainly from universities on the West Coast, will include research men trained in medicine and law as well as in the several social sciences. A small working group will meet for eight weeks beginning July 3 and will conduct a one-week conference with a larger group in August. At the University of Chicago a Seminar on Economic Efficiency in Agriculture will be held, beginning June 27, for a group of agricultural econ-

omists under the direction of Theodore W. Schultz. At Dartmouth College seven psychologists will meet together during July and August to appraise the status and current problems of learning theory. This conference is separately financed under a grant to the SSRC from the Carnegie Corporation of New York. These inter-university summer seminars are designed to aid outstanding research workers within the 30-40 year age group. This first summer is frankly experimental. It is hoped that additional plans will be initiated in other universities and a variety of topics for research offered for consideration.

National Office of Vital Statistics, a division of the Public Health Service in the Federal Security Agency, Washington 25, D.C., is now issuing the reports presenting some detailed marriage and divorce data for 1948, made possible by the cooperative state-federal project described in the paper by Dr. Samuel C. Newman, pages 426-429 of this issue of the *Review*. Comments on the reports are invited as well as suggested modifications in tables for subsequent years which would make the data more useful.

Eastern Sociological Society. The twentieth annual meeting of the Eastern Sociological Society, held at Boston University on April 22 and 23, had as its general theme, "A Half-Century of Sociology (1900-1950)".

Sessions were held on Community Research, Marriage and the Family, Race and Cultural Relations, Graduate Teacher Training and Research Training in Sociology, and on Reports on Current Research Projects. A demonstration was given of the Harvard Laboratory of Social Relations. At the annual dinner, M. F. Nimkoff of Bucknell University gave the presidential address and Harlow Shapley was the guest speaker.

At the business meeting, the Society reaffirmed its position of the previous year on academic freedom, endorsed the stand of the American Association of University Professors in expressing opposition to the discharge of college and university teachers because of membership in any lawful political party or other organization, and asked the American Sociological Society to consider similar action.

The following officers were elected: N. L. Whetten, University of Connecticut, President; Mirra Komarovsky, Barnard College, Vice-President; Jessie Bernard, Pennsylvania State College, member of the executive committee, and Bernhard J. Stern, Columbia University, secretary-treasurer. Other members of the executive committee are Seth Russell, Pennsylvania State College; Wilbert E. Moore, Princeton University; W. Rex Crawford, University of Pennsylvania; and Thorsten Sellin, University of Pennsylvania.

Brooklyn College of the City of New York. Dr. Rex D. Hopper, Assistant Professor of Sociology

and Anthropology, is to teach in the summer session of the Mexico City College, Mexico, D.F. He will offer courses in Latin American sociology, social movements, and principles of sociology.

Dr. Hopper has just assumed the duties of faculty adviser to the Brooklyn College Alpha Kappa Delta chapter. He succeeds Dr. Samuel Koenig, Assistant Professor, who served the chapter as adviser for four years.

Catholic University of America. The fourth annual Workshop on Marriage and Family Education and Counseling will be held at the Catholic University of America from June 9th through June 20. The theme of this year's workshop will be the problems of marriage: their nature, causes, extent and remedies. Specialists in each respective field will discuss frigidity, infertility, birth control, divorce, economic difficulties, husband-wife adjustments, and religious and moral difficulties.

The Very Rev. Francis J. Connell, C.S.S.R., Dean of the School of Sacred Theology and Professor of Moral Theology at Catholic University, will discuss the moral issues. Dr. Robert Odenwald and Dr. Frank J. Ayd, Jr., will represent the psychiatrist's viewpoint. The economic problems will be handled by Dr. A. H. Clemens, Director of the Workshop and Associate Professor of sociology at Catholic University, and the Rev. John Thomas, S.J., of the Institute of Social Sciences of St. Louis University, will discuss the various patterns in marriage. Miss Marie Corrigan, Dean of Women at Catholic University, will contribute to information on counselling and Dr. Dorothy Abts Mohler of the National Catholic School of Social Service to the field of the family case worker. Rev. Hugh Dunn, S.J., active in the Cana Conference movement, will conduct the seminar dealing with Cana and similar groups.

As a special feature a group of married persons will participate in a panel discussion on marriage problems, confirming and explaining the problems under discussion and the need for counselling. Motion pictures will also be used as a technique in counselling and several practical demonstrations are being planned. Cana conferences will be studied first-hand; methods and materials will be shown in action by those with broad experience in conducting such conferences.

Morehouse College. The Fifth Annual Institute on Successful Marriage and Family Living was held at Morehouse College March 15-17, 1950. The General Theme was "Constructive and Destructive Factors in Successful Marriage and Family Living." Participants on the program included Dr. Paul B. Cornely, Medical Director, Freedmen's Hospital; Dr. Esther Milner, Professor, School of Education, Atlanta University; Mr. Charles E. King, Chairman, Department of Sociology, Bennett College; Mr. Charles P. Browning, Director of Public Relations,

Chicago Defender; Miss Mary E. Langford, Field Consultant, Planned Parenthood Federation of America, Incorporated; Dr. Robert Straus, Assistant Professor, Laboratory of Applied Physiology, Section on Alcohol Studies, Yale University; Mr. William M. Cooper, Director, Division of Adult Education and Summer Study, Hampton Institute; Mr. G. Lewis Chandler, Associate Professor of English, Morehouse College; Dr. William A. Mason, Director, Health Education for Negroes, Georgia Department of Health; and Mrs. Madrid T. Hamilton, Program Director, Columbia Area Y.W.C.A., Philadelphia.

Professor Walter R. Chivers, Chairman, Department of Sociology, Morehouse College, and Mrs. Carrie Gartrell Chivers, Instructor in Sociology, Morehouse College, are Director and Co-Director of the Institute. Mr. Chivers has served as Consultant and participated in Institutes at Howard University, South Carolina State College, Florida A and M College, Savannah State College, Albany State College, The First Baptist Church at LaGrange, Georgia, Talladega College, and Tillotson College.

Northwestern University. Professor Thomas D. Eliot has received a Fulbright Act grant for nine months of research in Norway on selected aspects of the impact of the war on Norwegian life. He will be affiliated with the University of Oslo during his leave of absence. Recently he was elected President of the Midwest Sociological Society.

Professor William F. Byron and Professor Thomas D. Eliot are charter members of the reorganized Illinois Academy of Criminology, and were recently elected as Fellows of the Academy. Fellowship is by invitation to members who have made contributions of theory or knowledge in the field.

Mr. Leonard Reissman, Teaching Assistant in the Department of Sociology, has received a Social Science Research Council Pre-Doctoral Fellowship for study of levels of aspiration and social mobility, to begin in September, 1950.

Mr. Joseph F. Kauffman, Sigma Delta Tau Fellow in Sociology, has accepted a position as Director of the Anti-Defamation League for its newly established offices in Omaha, Nebraska.

Smith College. Mary E. Weber Goss will be with the department again as one of the instructors in the basic course. Bernard Barber is giving a new course for juniors and seniors in The Social Aspects of Science. Charles Page's promotion to the full professorship will take effect in September 1950; this coming summer he will teach in the first session at the University of California at Berkeley.

University of Hawaii. The teaching faculty of the combined department of Anthropology and Sociology now consists of ten regular staff members

and four graduate assistants. The staff in sociology consists of C. K. Cheng, Clarence E. Glick, Bernhard L. Hormann, Andrew W. Lind, George K. Yamamoto and Douglas Yamamura.

Volume thirteen of *Social Process in Hawaii*, published by the Sociology Club of the University of Hawaii, has recently appeared from the press. Faculty contributors included Jesse F. Steiner on "Japanese Americans on the Mainland: Post-war Status and Problems," and Andrew W. Lind on "Kona—Haven of Peoples."

Four graduate assistantships with an annual stipend of \$1200 and exemption from tuition and fees are available for 1950-51 in anthropology and sociology. Applications should be received before May 15th.

University of Kansas. Robert G. Foster has resigned from the Department of Sociology and Home Economics to accept a full-time position on the staff of The Menninger Foundation in Topeka, Kansas. Here he expects to continue his work in the training of psychiatric residents in the field of social psychiatry and to undertake an advanced post-doctoral training program for persons engaged in family counseling. He will also work part time with the newly organized Shawnee County Guidance Center.

University of Michigan. Professor Guy E. Swanson has been appointed Research Associate in the Research Center of Group Dynamics on a one-half time basis. He is connected with the Center's Social Change Program.

Professor Jitsuchi Masuoka of Fisk University is a visiting member of the Sociology staff this semester. He is replacing Professor Horace Miner, who is doing field work in North Africa.

Professor Allison Davis of the University of Chicago is teaching a course in Social Stratification in American Communities this semester.

The Institute for Human Adjustment, in cooperation with the Extension Service of the University of Michigan, announces the Third Annual Institute in Living in the Later Years, to be held in Ann Arbor on June 28-30. The program will include Mental Health and Medical Problems of an Aging Population and Education for an Aging Population, with lectures, organized discussion groups, and demonstrations. Persons interested in attending should write to University of Michigan Extension Service, 4524 Administration Building, Ann Arbor, Michigan, for further information.

Dr. Gunnar Dybwad, who last year spent two months in Germany as consultant to the Secretary of the Army, has been called back to the Office of the High Commissioner for Germany for another consultation period for the summer of 1950.

Human Ecology, by Dr. Amos H. Hawley, has been published by the Ronald Press.

Wayne University. Dr. John Biesanz is Visiting

Associate Professor and is offering courses in Anthropology and The Family. Dr. Biesanz, who was previously at Tulane, has also spent the last two summers in Panama completing field work initiated in 1946-47 while United States Visiting Professor of Sociology at the University of Panama. This study was aided by Carnegie Foundation funds. Dr. Biesanz is replacing Dr. Norman Humphrey who since January has been Visiting Professor of Social Anthropology, Escuela Normal Superior, in Bogotá, Colombia, under an arrangement of the U. S. State Department International Exchange of Persons. Dr. Humphrey will also make a study of a Colombian village.

Dr. Edward Jandy has been assigned to the post of Cultural Officer with the Public Affairs Division of the U. S. Department of State and will be stationed in Tel Aviv, Israel, after June 15. Dr. Joseph W. Eaton has had his grant from the United States Public Health Service renewed for a second year. Under this grant Dr. Eaton is continuing his study on the "Cultural and Psychiatric Factors in the Mental Health of the Hutterites." Dr. H. Warren Dunham has been appointed Research Director of the Michigan State Psychiatric Research Clinic which is studying the problem of "The Sex Deviate in Modern Society and His Impact Upon the Community." Professor Donald C. Marsh is developing a bibliography of social science research on the Detroit metropolitan region. Dr. Stephen W. Murchur is working with the inter-college inter-departmental committees seeking to develop an extensive instructional and experiential program in child development and home and family living. This project, in its planning stages, is being financed through the Michigan Department of Health. The objectives involve the development of an undergraduate, graduate, and multi-professional program in the fields indicated.

Western Reserve University. A second summer Workshop in Intergroup Relations will be conducted by the Graduate School of Western Reserve University, Cleveland, Ohio from June 20 to July 28.

Director of the Workshop will be Dr. Richard A. Schermerhorn, associate professor of sociology and author of the recent book, *These Our People: Minorities in American Culture*. Raymond Fisher, assistant professor of group work at the University's School of Applied Social Sciences, will be assistant director.

Other staff members of the 1950 Workshop include: Ethel Alpenfels, anthropologist in the New York University Dept. of Education; Bruno Bettelheim, director of the University of Chicago Orthogenic School; Allison Davis, professor of education at the University of Chicago; and Huldah Fine, principal of Hampton School, Detroit, Michigan.

Cooperating agencies in the project are the National Conference of Christians and Jews, National Association for the Advancement of Colored People,

National Urban League, Jewish Community Council, Cleveland Group Work Council, and the Community Relations Board.

The Workshop is open to graduate students and others fulfilling Graduate School requirements but not desiring a master's degree. Enrollment will be limited to 40 students.

Yale University. The Graduate Sociology Club, run by the students, began its activities this year with the annual "Shop Talk," a faculty-student forum on professional problems. Professors Davie, Bacon, Hollingshead, Simmons, Reed, and Sirjamaki were members of the forum panel. Speakers who appeared before the club this year included Dean Liston Pope of the Yale Divinity School, Mr. Lewis Mumford, Dr. T. K. Noss of Adelphi College, Professor Burt W. Aginsky of C.C.N.Y., Professor Vincent Whitney of Brown University, and Professor Joseph S. Roucek of the University of Bridgeport. Officers for the year were John Thomas Liell, President, Marvin Sussman, Treasurer, and Richard Coughlin, Secretary.

AUTHOR'S REQUEST

Biography of Robert E. Park. Materials for a biography of Robert E. Park, as authorized by Mrs. Robert E. Park, are being collected by one of Dr. Park's former students, Theodore K. Noss, Adelphi College, Garden City, New York. Dr. Noss is looking for materials of scholarly or human interest nature, notes of classroom lectures, formal and informal reminiscences, incidents, anecdotes, and letters from those who knew Dr. Park or were interested in him. Credit will be given where desired. The purpose is a compilation of materials, critical as well as favorable, which will reveal Park's personality and interests and his contributions to his students and the field of sociology.

OBITUARIES

OLIVER EDWIN BAKER, 1883-1949

Dr. Oliver Edwin Baker, member of long standing in the American Sociological Society, passed away suddenly on December 2, 1949. Born in Tiffin, Ohio, on September 10, 1883, he was a resident of College Park, Maryland, where at the time of his death he was in charge of the Department of Geography at the University of Maryland, and in addition taught advanced courses in the fields of population problems and land utilization. Surviving are his widow, Mrs. Alice Crew Baker, a son and three daughters.

He was graduated from Heidelberg College in 1903, received his A.M. at Columbia in 1905 and his Ph.D. at the University of Wisconsin in 1921.

For many years he was with the Division of Farm Population and Rural Life of the United States Department of Agriculture where from 1914 to 1936 he was the Editor of *Atlas of American Agriculture*. His special field of work was economic geography and he was recognized as an eminent authority on world population problems.

His counsel as a member of the Board of the Academy of World Economics, and his contributions as scientist, scholar, and teacher, won for him a deep and affectionate regard among his associates.

HAROLD HOFFSSOMMER

University of Maryland

CLARENCE GUS DITTMER, 1885-1950

Clarence Gus Dittmer was born in Augusta, Wisconsin, on May 30, 1885. There he lived his youth and received his early education. His father, Gustav Dittmer, German born, emigrated with his parents to this country in the middle of the last century. He married Jennie Hatch and established himself as one of the central figures in practical bee culture in the upper Mississippi Valley.

However, neither bee culture nor natural history were to be the interests of Clarence Dittmer, whose concern throughout his adult life was to be with people. Upon his graduation from Augusta High School in 1906, he entered Baker University at Baldwin, Kansas. But Baker did not satisfy him, and so, at the end of his freshman year he transferred to Hamline College in St. Paul, from which he received the Bachelor of Philosophy degree in 1910. At Hamline he chose as his major professor, Gregory Wolcott, in philosophy. Wolcott left a lasting impression on him. For, "he had no place for religion in his teaching of philosophy," a fact that led to his teacher's release from Hamline. The young Dittmer was fundamentally religious; indeed, he was religious throughout the years, but he had also learned a positivist skepticism that ultimately brought him into sociology.

The decade following his graduation from college was spent mostly in the Orient. Immediately after graduation an opportunity came to go to Japan under the auspices of the Y.M.C.A. There he taught English for three years in the Imperial Government Schools at Shimonoseki and Osaka. He had not yet discovered his life's work, but his lasting love of travel and interest in people were finding their first expression. During the Japanese period a

fortunate accident occurred, ultimately to become the decisive event in his life. He served as a guide and interpreter for Edward A. Ross on one of his sociological visits to Japan. It was to take a few years for the seeds left by Ross to fertilize the positivism implanted by Wolcott, but when they began to break soil, Clarence Dittmer would turn to Ross as preceptor and teacher.

In the meantime he had to free himself from his dedication to religious work. His goal was the Episcopal clergy, and to this end, in 1913, he enrolled at Union Theological Seminary in New York. There, by virtue of dual enrollment in the Columbia University Graduate School he had his first formal introduction to sociology in courses under Giddings. The final die was cast in that year—for him it was henceforth to be an academic career in sociology.

When, in 1914, he returned to the Orient, it was not as a teacher of elementary English, but rather as an instructor in Economics and Sociology in the newly established American Indemnity College at Peking, now known as Tsing Hua University. His three-year stint finished, he headed right for Wisconsin to take his M.A. in sociology under Ross and Gillin, with a minor in economics under Commons and Ely, in 1918.

In this summer, he married his childhood friend, Florence Farnum, of Augusta. The honeymoon trip was the voyage back to Peking for three more years at Tsing Hua, where he collected data for the doctoral dissertation he was to write under Ross on population problems in China.

An instructorship in economics and sociology awaited on his return to Wisconsin in 1921. Three years later, doctorate in hand, he was promoted to Assistant Professor in Sociology with his chief responsibility the teaching of statistics.

In 1926 came a call to New York University as Associate Professor of Sociology in the Washington Square College of Arts and Sciences. Two years later he attained his full professorship and the administrative chairmanship of the Department of Sociology in the Washington Square College. His job was to expand its work and offering from that of a one-man unit to a full-fledged department. He accepted the challenge with his characteristic enthusiasm and bubbling energy. Within three years he had established a well-rounded program in sociology *per se* and a sound pre-professional foundation in social work as well. He

encouraged and abetted the introduction of anthropology into his department and blessed its metamorphosis into a department of sociology and anthropology in 1936. As a departmental chairman he always encouraged, never inhibited, the work of his junior colleagues. He felt that his function was not to control but to guide and assist with whatever resources he could marshal.

In the meantime he had published his *Social Statistics* (1927) and, in collaboration with Gillin and Colbert, the highly successful textbook, *Social Problems* (1928). He wrote frequently for the New York Herald Tribune Magazine Section and also the Book Review. *The Survey* was the medium of publication for a number of articles.

Through all his active years Clarence Dittmer revelled in a surging *joie de vivre*. Although he soon found himself a suburban home, he embraced New York with fervor. The Town Hall Club was a favored haunt and the Andiron Club a treasured association. In the professional field he founded and sponsored the Gamma of New York Chapter of Alpha Kappa Delta, and played an active role in the Population Association, of which he served as treasurer in 1934. He was one of the most active and enthusiastic of the founders of the Eastern Sociological Society and was honored with its presidency in 1938. He was a long-time member of the American Sociological Society, a member of Pi Gamma Mu and a Thirty-second Degree Mason.

Always he lived with a restless, eager tension; joyous and generous. His was the spirit of youth, and the young responded to it. With no offspring of his own, his home was ever a Mecca for the young. Those who had known him in earlier days at Wisconsin sought him out when their paths led to New York. Those who were his neighbors' children thronged to his livingroom night after night and all day on Saturdays and Sundays. They could not resist the lure of his enthusiastic and never stale interest in them as persons.

In the summer of 1939 he was felled by a tragic cerebral hemorrhage. He passed through the first crisis but emerged paralyzed down one whole side of his body. With steady effort he gradually improved his condition month by month, but he was never again able to return to his teaching or his work. By 1941 he was well enough to travel with Mrs. Dittmer for a winter in Florida. The next year the Dittmers

turned their faces homeward to the environs of their youth. There at Antigo, Wisconsin, after a slow and progressive relapse death came to Clarence Gus Dittmer on Sunday, March 5th, 1950.

E. ADAMSON HOEBEL

University of Utah

RAYMOND KENNEDY, 1906-1950

On April 27, while traveling by jeep from Bandung to Jogjakarta in central Java, Raymond Kennedy, Professor of Sociology at Yale University, was set upon by an armed gang of natives in uniform and killed. With him at the time, and also a victim of the assassins, was Robert J. Doyle, a native of Chicago, who worked for *Time* and *Life* magazines out of Hong Kong. Kennedy was on a sociological field trip during a sabbatical leave. He had left New Haven in June 1949 for what was to have been a 15-months' study of levels of acculturation in selected areas of Indonesia. He had completed his investigations in Celebes, Ceram, Ambon, Flores, Borneo and other islands and planned to finish his field work in Java and Sumatra. He had been in Java only a week.

Kennedy was a world authority on Indonesia. He had previously lived in the area, he spoke and read Dutch and Malay, and he had covered practically all of the literature on the islands, both in this country and in the Netherlands. He had virtually completed a three-volume work on the peoples and cultures of Indonesia and his recent field trip was partly for the purpose of final check-up before publication. His firm belief in the necessity for empirical work in social science led him to undertake a field investigation even when it meant enduring discomforts and dangers in primitive and disturbed areas. The trip was supported by the Viking Fund, the Coolidge Fund, and the Social Science Research Council. He was the author of *The Ageless Indies, Islands and Peoples of the Indies, The Islands and Peoples of the South Seas and Their Cultures*, and *Bibliography of the Indonesian Peoples and Cultures*. He also contributed to *Jews in a Gentile World, The Science of Man in the World Crisis*, and *Most of the World*.

Raymond Kennedy was one of the most colorful members of the Yale faculty and an idol of the students. President Seymour stated: "He was not only one of Yale's top scholars, he was also one of our most popular and effective classroom lecturers. His loss will be sorely felt, not only in his specialized field, but here on the cam-

pus as well." Lovable, warm-hearted, "a sociologist with a conscience" as the students dubbed him, Raymond Kennedy was a champion of the underdog, whether in America, in Indonesia, or elsewhere in the world. He had written and spoken vigorously in support of the native movement for independence in Indonesia. Premier Mohammed Hatta in a radio message said, "In Professor Kennedy the United States and Indonesia have lost an eminent scholar and a man who was helping to build a bridge of understanding between the East and West." Dr. Ali Sastroamidjojo, Ambassador to the United States, stated: "Raymond Kennedy was one of the great men of this world, a man who stood for justice and decency and all the fine things of which the human race is capable. We shall none of us ever forget him nor shall we cease to mourn his loss." He was buried at Bandung, Java.

Raymond Kennedy was born in Holyoke, Massachusetts, on December 11, 1906. He graduated with a B.A. degree from Yale University in 1928. The following year he taught at the Brent School in Baguio, Philippine Islands. From 1929 to 1932 he served as field representative for the General Motors Corporation in Java and Sumatra. He returned to Yale for graduate study in sociology and anthropology, where he found a unique collection of Dutch and other materials on the East Indies in the Yale Library, a collection started by Professor Sumner and developed by Professor Keller and later by Kennedy himself. He received his Ph.D. degree in 1935 and immediately became a member of the faculty, advancing steadily to become Professor of Sociology in 1947. He was an ideal colleague and a source of strength in the Department. Witty and genial in personality, constantly helpful to students and faculty, he inspired deep admiration and affection in his associates.

During World War II he was consultant to the U. S. Department of State and the Office of Strategic Services on Southeastern Asia affairs. He was a loyal member and active supporter of the American Sociological Society and served both on its committees and on the editorial staff of the *American Sociological Review*.

Raymond Kennedy is survived by his wife, Ruby Jo Reeves Kennedy, also a Yale Ph.D., who is Professor of Sociology and chairman of the department at Connecticut College, and a daughter, Ellen Reeves, aged two. Mrs. Kennedy was to have joined her husband in Java in June and to have flown back with him to the United States in August.

MAURICE R. DAVIE

Yale University

CARTER GODWIN WOODSON, 1875-1950

Dr. Woodson, founder and director of the Association for the Study of Negro Life and History, died in Washington, D.C., on April 3, 1950. He was 74 years old. A native of New Canton, Virginia, Dr. Woodson was the son of former slaves. He attended Berea College in Kentucky and the Sorbonne in Paris and then entered the University of Chicago where he received a B.A. degree in 1907 and a Master's degree in 1908. He received his Ph.D. degree from Harvard University in 1912. In 1939 Virginia State College conferred on him an LL.D.

Dr. Woodson taught in the public schools of the District of Columbia from 1909 to 1918 when he became Dean of Liberal Arts at Howard University. Later he went in the same capacity to West Virginia Collegiate Institute where he organized and became president of the Associated Publishers, Inc. He retired from teaching in 1922 to devote himself to writing and publishing. He was the founder in 1916 and editor of the quarterly *Journal of Negro History*; also the founder in 1937 and editor of *The Negro History Bulletin*. He was the author of many books on the history of the Negro, including *The Education of the Negro Prior to 1861*, *History of the Negro Church*, *A Century of Negro Migration*, and *The Negro in Our History*, the last mentioned running into numerous revised editions. Among his other writings were *The Negro Professional Man and the Community*, *The Mis-Education of the Negro*, and, with Lorenzo J. Greene, *The Negro Wage Earner*. In 1926 he was awarded the Spingarn Medal by the National Association for the Advancement of Colored People.

BOOK REVIEWS



✓ *The History and Social Influence of the Potato.*

By REDCLIFFE N. SALAMAN. Cambridge: Cambridge University Press, 1949. xxiv, 685 pp. 50s.

This is without doubt one of the most exhaustive and most thoroughly documented accounts that has ever been published on the history of any important food. As the title of the book indicates, the author's purpose is not merely to set down a chronology of man's recorded improvement, cultivation, and uses of the potato, but to analyze the interactions of the human and botanical phenomena involved. He shows how its availability and use have been correlated with the development of a civilization, at high Andean altitudes, that would have been impossible without it; with the art, the religious and social customs of pre-Inca peoples; with the political, economic, and even military fortunes of many of those who have depended upon it since the white man discovered it. Less important, perhaps, but no less interesting are brief chapters on the place of the potato in the art, folk-lore, and literature of the British Isles; and, more recently, its industrial uses.

The work is illustrated by more than 100 excellent cuts and charts.

The first ten chapters will be of keen interest to the student of agricultural botany as well as to the ethnologist and sociologist. The probable origin of the cultivated potato, its relation to other species, the characteristics and distribution of various species, early culture, preservation, and use are discussed in detail. The conflicting stories of the introduction of the potato into Europe and the British Isles are critically examined, as are the confusion and errors of the early botanists. Although this part of the work is strongly botanic or agronomic in point of view, the human element is never neglected.

Of perhaps major interest to students of politics, sociology, and economics are some twenty chapters that detail the social, political, religious, and economic situations and changes which were contingent upon potato cultivation—chiefly in the British Isles—from the 16th to the 20th century. The potato, the most efficient subsistence crop ever cultivated in the temperate

zone, is shown to have played a vital part in the fortunes of the people, both ill-fortune and fair, during those times. The degree to which any large group depended on the potato as its principal food was highly correlated with the degree of political and economic oppression imposed upon them. Repeatedly, it appears that the author may place too much blame upon the lowly potato itself for the almost inhuman plight of the hapless peasant and laborer. The association between man's dependence on the potato and his misery was real enough in the instances cited, but it is not entirely clear that the peasant, the laborer, the whole economy of Ireland, for example, would have fared much less badly before the famine of 1846-1847 if the potato had never been introduced. Insofar as the remarkable productivity of this plant supported—in poverty—a much larger population than could have subsisted on other available crops, the magnitude and duration of social ills were doubtless increased. Also, insofar as this crop encouraged or even made possible a retrogression to a single-crop food economy, it contributed to the completeness of the social and economic collapse of Ireland following the potato blight years of 1845-1847.

In the middle chapters it is repeatedly implied that the landlords and rulers were emboldened to proceed with their succession of impoverishing acts because they knew that those whom they made poorer could stave off actual starvation by means of the potato. The author had already shown, however, that the potato was virtually unknown in Europe and the British Isles when the dire effects of English policy fell upon Ireland in the 17th century, forcing the initial exploitation of the crop in the Old World. The author may be right in concluding that without such an efficient food-crop as the potato for the peasant to fall back upon, the dispossession, the increases in rents, and other harmful measures might not have proceeded as far or persisted as long as they did. It seems reasonable to suppose, however, without the potato such oppressions still would have progressed until the individual peasant was quite as hungry and miserable in subsisting on some

other crop rather than the potato. Indeed, somewhat similar one-crop subsistence has developed and long persisted in other lands that grew few if any potatoes.

The causes and consequences of the famine in Ireland in 1845-1847 are dealt with at length. Warnings given by previous crop failures and lesser famines had gone unheeded, but the calamity of 1845-1847 compelled drastic changes over the next quarter century. Land tenure, cropping systems, food habits, employment practices, in fact the whole agricultural and economic structure, were gradually changed for the better.

The effects of terrain, soil, climate, competing crops, pre-existing land tenure and farming systems, interregional and international trade, and their interrelations with the development of the potato as well as the socio-political-economic relationships are analyzed extensively. The chapters that deal with England, the Highlands and Lowlands of Scotland, Wales, Jersey, and some other islands give a view different from that of Ireland. It becomes clear in later chapters that the potato is not in itself a menace to society. In areas where men have been wise enough to deal fairly with one another, and where there have been possibilities of exploiting a diversity of crops, the population has not been reduced to a bare subsistence on potatoes or any other one crop. On the contrary, under favorable conditions the potato has been made, variously, an excellent additional component of a diversified food supply, a valuable emergency crop in wartime, a profitable commodity for export, and a convenient raw material for manufacture of alcohol, starch, and other industrial products.

Salaman's work is unusual in that he has clearly delineated the history of a food plant throughout the whole of the complex pattern of the cultures of the respective peoples who have influenced its development, in order to show how their own development and affairs have been influenced by it. Students both inside and outside the field in which the author is an acknowledged leader may be disposed to argue some points of interpretation. This scholarly example, however, should stimulate other studies of this kind into the largely neglected interrelations between human affairs and specific food—and non-food—crops.

VICTOR R. BOSWELL

*Plant Industry Station,
U.S. Department of Agriculture*

Agriculture and Industrialization: The Adjustments That Take Place as an Agricultural Country is Industrialized. By PEI-KANG CHANG. Cambridge: Harvard University Press, 1949, xii, 270 pp. \$5.00.

This book is little more than an attempt to review the pertinent literature of the title-subject in selected countries. Beginning with a discussion of different approaches to the field, the author finds the "general equilibrium approach" impossible and settles on the "partial equilibrium approach," with certain modifications, as the most desirable. That is to say, while recognizing the impossibility of including all relevant factors, he finds it necessary to focus attention on one or two—such as agriculture and industrialization—with some cautions.

The body of the book is designed to answer four questions: (1) Is industrial development a necessary or a sufficient condition for agricultural reform in densely populated rural regions, or vice versa? (2) Is it possible to maintain a balance between agriculture and industry within a given country? (3) Is it possible to maintain harmonies and mutually beneficial relationships between countries primarily agricultural and those essentially industrial? And, if the process of industrialization occurs in any agricultural country, what are its possible effects on countries already highly industrialized? (4) What are the problems which would most probably confront an agricultural country like China during its process of industrialization? (p. 231)

To the first question the author's answer is that "industrial development is a necessary, but not a sufficient, condition for agricultural reform and improvement." To the second, the answer is that agricultural production tends to expand as industrialization develops. His answer to the third question is that the effects of industrialization in the agricultural countries will in the long run prove to be beneficial to the early industrialized countries, necessitating some adjustment in the latter. The author treats the fourth question by reiterating his answers to the three previous questions, except that he mentions the need for drastic land reform.

To arrive at these answers Mr. Chang has gone through a great number of works of economic analysis and has synthesized them admirably. There is, however, one serious drawback. The author recognizes at the beginning that a gap exists between "economic theory and eco-

conomic history" (p. 18), but he certainly does not even try to fill this gap. Thus while admitting that there are five fundamental factors in industrial evolution—population, resources, social institutions, technology, and entrepreneurship (pp. 79-80)—he dismisses such important ones as taste and social institutions "for the sake of simplicity." This procedure may be warranted if applied to two countries like Norway and Sweden, but will throw the whole analysis off the mark if applied to two countries like the U.S. and China. In the latter case the factor of social and cultural differences may be so vital as to be the crux of the situation and cannot, therefore, be dispensed with "for the sake of simplicity."

The author's lack of understanding of the nature and importance of social institutions is betrayed by his wholly untenable classification of the latter with "resources" and "population" as limitational factors (p. 80), and by his statements such as "Given geographical phenomena, it is technology that brings economic and social changes." (p. 94) Even in a comparison between the industrial histories of China and Japan, any observant social scientist can see that it was not so much the population density, resources, or Western technology as it was social institutions which made the difference.

As a result, while his discussions of European and American data in general have an air of unreality, his application of the economists' general findings to China is even less satisfactory. In fact the entire Chapter VI entitled "Industrialization in An Agricultural Country" (the word "agricultural" is misprinted in the text as "industrial" (p. 195) could be written without any knowledge of the conditions prevailing in China. This was, indeed, what the author would seem to have done. His "interpretations" on Chinese industrial future in China are mere extensions of his arguments derived from the Western countries and Japan. And he concludes, with meticulous but unconvincing finality, that as industrialization "reaches the point of obtaining a 'reasonable' standard of living for the people . . . agriculture cannot escape playing a somewhat declining role"; that "as industrialization increases . . . [there will be] 'a drift in the demand for food—from cereals to animal products'; that "part of the rural population will be shifted to commercial and industrial centers"; that agriculture "will be . . . a major source of supply of raw materials for manufacturing industries"; that agriculture will

provide "purchasers of goods produced in industrial plants" (pp. 204-205); that the "efficiency" and "well-being" of the Chinese farmers "would increase greatly if some machines for basic farm work could be introduced." (pp. 200-207). And so on.

Reading all this reminds the reviewer of a historical anecdote attributed to an emperor of the Third Century A.D. A minister reported to his majesty that the people were suffering from starvation. "Why don't they eat meat?" snapped the emperor. But Mr. Chang's work perhaps reflects the prevailing standard of economic analyses. In many of these works the drive to scientific perfection is so great that the complicated reality has to be reduced arbitrarily and drastically "for the sake of simplicity." The result is an analysis, exemplified by the present volume, where the theoretical niceties have little to do with the actual facts and which leaves the reader exactly where he started concerning the process of change from agriculture to industrialization of a given country like China.

Yet because of Mr. Chang's high degree of familiarity with the prevailing economic literature he has done the sociologists and anthropologists (like the reviewer himself) a great service in presenting them most of the theories on the subject in one compact and readable volume. For this the author should be congratulated.

FRANCIS L. K. HSU

Northwestern University

Industrialisation et Technocratie (Première semaine sociologique organisée par le Centre d'Études Sociologiques). Edited by GEORGES GURVITCH. Paris: Librairie Armand Colin, 1949. xiv, 214 pp. 400fr.

This volume is a heartening sign. For more than a decade of war and reconstruction French sociology was relatively inactive. We reread the classics, even published them in translation, but we had almost come to the point of discounting France as a vivifying force in the field. The intellectual tragedy of 1914-1918, when so many promising young French sociologists were destroyed, may finally be a closed chapter. A new generation has come of age, eager to develop sociology as did the pre-World War I generation. This volume, and others in press or preparation, will be reminders and auguries. These materials are developing under the auspices of the Centre d'Études Sociologiques, a unit of the Centre National de la Recherche

Scientifique, established shortly after the Liberation.

Aims and activities of the Center parallel trends in this country: promoting and coordinating research, training research men, developing bibliographical materials, and exchanging information with foreign scholars. During the period 1946-1949 some seventy-two conferences, constituting introductions to research in various fields, were organized by the Center. The results of some of these have been stenotyped and multigraphed, and others are planned, by the Centre de Documentation Universitaire. Some of the subjects covered include sociology of law (Henri Levy-Bruhl), sociology of knowledge (Georges Gurvitch), social structure (A. Leroi-Gourhan), community analysis of the town of Auxerre (Charles Bettelheim), professional composition of urban populations (Pierre George), and social psychology in the United States (Otto Klineberg). The Center also has backed publication of *L'Année Sociologique*, third series (1940-1948), and *Cahiers Internationaux de Sociologie*.

Industrialisation et Technocratie contains the papers and some of the discussions of the First Sociological Conference, which hereafter will be held every two years. The sessions took as their theme the problems raised in James Burnham's *The Managerial Revolution* (translated as *L'Ère des Organismes*, 1947). Aware as the participants were that the book itself does not warrant extended analysis, only a part of the discussion is devoted to that end. The problems, however, are of significance for all of us. They are treated under a number of rubrics: technicians—managers and engineers—as a class (Charles Bettelheim, Jacques Vernant, Maurice Byé, and others); the characteristics of industrial society (Harold J. Laski, Henri Lefebvre, Georges Friedmann, *et al.*); relationships between workers and the machine (Emmanuel Mounier, Laski, Everett C. Hughes, *et al.*).

Because the volume contains both papers and discussions, no summary can analyze the collection adequately. A few comments may nevertheless be made to indicate its nature.

1. The recent work of French sociologists indicates a growing interest in field research, in immediate social problems, and in the France of today. However, the present articles exhibit a historical perspective and general social scientific breadth which are not frequent in the U.S. The paper by Georges Friedmann ("Les technocrates et la civilisation technicienne"), one of

the foremost socio-economic historians of France, is a case in point. Yet Friedmann, author of *Problèmes Humains du Machinisme Industriel* (Paris: Gallimard, 1947) is also actively engaged in empirical research in several industrial establishments.

2. The work of Marx is accepted as part of the intellectual heritage, just as Weber, or Troeltsch, or Durkheim. There is no feeling that the writers wished Marx had a pseudonym. One of the better analyses from Marxian grounds—not Communist, but Marxian—is that by Bettelheim, arguing shrewdly against considering the "technocrats" as a class. He does not find them to be nearly so dangerous as does Gurvitch.

3. The humanistic emphasis throughout the book reminds us constantly that it is the ideals of modern man which are the focus of interest. More clearly than our industrial psychologists and sociologists, these writers, in particular Lefebvre and Byé, understand that most of our "research work" has been some form of Taylorism or Fordism.

4. As a consequence of the preceding emphasis (though somewhat more difficult to document), there is a rejection of the machine as the key to modern social problems, and an insistence on analyzing the machine as an outgrowth of modern society, rather than vice versa.

5. These writers are aware of even the fairly recent work in the U.S., as the presence of Hughes attests. Indeed, in the discussions between Hughes, Laski, Gurvitch, *et al.*, one has the embarrassing impression that they are more sophisticated about our work than we ourselves. This is not to the discredit of Hughes, for few of us could answer easily the shrewd questions posed by the discussants.

U.S. sociology has indeed grown: now the French read our work. But with this honor goes a consequence: we must now listen to their criticism. We have astonished them with our vast output, our statistical audacity; but, with reference to the theme of this volume, they wonder why our industrial sociologists have not studied the unions, a huge and embarrassing gap; or, why we who call ourselves sociologists emphasize internal tensions, personal dissatisfactions, and individual opinions. The American sociologist who is interested in industrial society will find this a stimulating series of discussions and papers.

Wayne University

WILLIAM J. GOODE

✓ *The Culture of Industrial Man.* By PAUL MEADOWS. Lincoln, Nebraska: University of Nebraska Press, 1950. 216 pp. \$3.75.

The author of this volume declares his work to be neither a text in industrial sociology nor a treatise in industrial relations, and says he has written "in the contemplative spirit and mood of social philosophy." He writes from "the firm belief that the sense of crisis which industrial peoples everywhere have come to regard as normal experience is an enduring symptom of our time." The question is "how can an industrial civilization persist?" Part I is entitled "Human Values in Industrial Civilization."

The author finds that the dilemma of modern industrial man is due to a "tragic disjunction" of the inner and outer structures in industrial culture and the "sharp and severe cleavages in its outer structure." "Industrialism," says the author, has both "atomized and organized human relations and this paradox makes it practically unmanageable." In discussing conflicts of ownership in an "industrial feudalism," we are told, "The same dramatic themes are enacted over and over. The concentration of authority, the debauching of politics, the fraudulent misrepresentation of values, the desiccation of integrity have become commonplace." The industrial worker is said to be the archetype of industrial men; the mirror of all industrial men. About the industrial worker we read: "The evidence, in fact, does not need to be extended: the theme that it is a shaky and unrewarding thing to rest the future of industrial society upon the shoulders of the industrial worker needs no corroborating evidence. . . . The industrial worker has become one of the most real facts and ominous portents of our existence." Everywhere, declares the author, industrial men turn "to the tactics and technics of the state for the support of the falling timbers of their way of life." A series of subsequent chapters treat respectively of the problems of mass employment, trends in contemporary industrial relations, the new personality in industry, mass communications, popular culture, and a socialized population policy. Part II deals with "The Politics of a Free Industrialism."

From the evidence in Part I the general conclusion is reached that "industrialism is a mass culture in conflict but trend lines are everywhere apparent pointing in the direction of new routines of collaboration under the leadership of the liberal state." It is held that a new type of invention is called for—social invention in the field of human relations. Professor Meadows asks for

a revival of the liberal spirit found in the "recovery of the belief in the common man." He rejects the public industrialism of Europe which resulted in Fascism and Communism, stating that there is a liberal industrialism which "rejects Europe's national and class hatreds." The problem before us, he declares, is the invention of political methods which will express the liberal spirit and lie within the scope and province of a democratic state; which will accept the view that free men can live "in an industrial world only if it is an organized society." We are told that it is difficult to describe the belief of this new liberal state. Yet Professor Meadows argues for an administrative liberal state, operating under a formula which will embrace social agreement upon planning, "the liberal genius for compromise must evolve a political pattern in which both state and people collaborate in the construction of a free collectivism." This type of planning state is said to be "the only effective alternative to the revolutionary violence of the totalitarian state and its total wars; in the same general tenor we learn that "An administrative revolution which expresses the philosophy of the socialized human being offers the only available mode of meeting the tragic sense hanging over industrial society everywhere." We are solemnly warned that "The quest of the modern industrial man is search for significance as a human being. Early liberalism atomized this quest, and the masses lost it. The anti-liberalism of European political monopolists and of American economic monopolists collectivized the quest, and again the masses lost it. The new fashioned liberalism must learn from these tragic fallacies." Finally, Professor Meadows points to what he calls "neo-industrialism which protests the concentration and enlargement trends" in industrialism, the growing dissatisfaction with bigness; the keyword here is decentralized; "neo-industrialism is a decentralized way of life." It is stated that "Industrialism is decentralizing under our very eyes." The author's treatment—as the passages above indicate—is marked by broad assertions and by a quality of vehemence which at times weakens an endeavor at analysis which if more restrained might be more convincing.

Many of the chapters were published in various journals as separate items. This may be responsible for the impression that the work is loosely articulated. Basically the work is less a treatment of the culture of an industrial age and more of a wishful plea for a blue-print of the future.

How the work will be regarded will likely depend upon the predilections of its readers. One group will wonder audibly about what the colleges are coming to; others will find in it a bulwark for their faith in the planning idea; and many others will speculate upon just what the volume has accomplished. The author packs a lusty punch, but he delivers scattered blows at a tremendous target!

HERBERT MAYNARD DIAMOND

Lehigh University

A Village That Chose Progress: Chan Kom Revisited. By ROBERT REDFIELD. Chicago: The University of Chicago Press, 1950. xiv, 187 pp. \$2.75.

Chan Kom is a village of 445 people of Maya origin in Yucatan, already known to readers of *Chan Kom, A Maya Village* (1934), by Redfield and Alfonso Villa, and of Redfield's *The Folk Culture of Yucatan* (1941). In his first visit in 1931, Redfield found that "the villagers had committed themselves to progress and civilization so vigorously" that he returned in 1948 to see how they had succeeded in attaining their objectives and how they felt about their achievements.

In choosing progress, as exemplified by their decision in 1917 to become a *pueblo*, the leaders of Chan Kom were desirous mainly of political authority and economic betterment. By 1948 they had achieved both. Chan Kom was "the recognized and authoritative community of an area fifty miles across." The bush settlement had assumed the aspect of a Spanish town; it had storekeepers and middlemen, a few technicians in practical arts, respect for private property, few poor.

Anxious for technical progress and material advancement, village leaders welcomed such agencies as the school, a cultural mission, easier access to the city, and even a Protestant evangelical mission. During the early thirties they were hospitable to new and even radical innovations: modern dress, Spanish, co-education, new skills, even a new religious ritual and code of personal conduct. Upon closer acquaintance, the majority rejected Protestantism, as they did most other innovations which did not harmonize with their desire for material advancement and their traditions of productive industry, frugality, sexual morality and sobriety without Puritanism. The leaders had conceived of progress as consisting of material benefits; they were not asking for a moral revolution.

That there was a general swing back to tradition is due largely to the stability of village social structure, based on patrilineal great families, and to the moral and religious sanctions given to the patterns of hard work centering around the growing of corn. So strong is the former pattern that it has persisted in spite of a trend toward single-family households; so bound up with tradition is the latter that even the businessmen and specialists of the village still make *milpa*. Material success has not yet brought with it a desire for conspicuous consumption, nor a class system based on wealth.

The leaders, their goal of material success and political status realized, have set no new goals. Aware of alternatives in medicine, religion, dress, language, and other areas, they define and defend their position and fear decadence after they are gone. They are uneasy about the future, seeing in the road and the school a threat to the old ways and the traditional virtues. In spite of them, change goes on, oriented to the Anglo-Saxon culture, more akin to the acquisitive, practical, Maya turn of mind than is the expressive, passionate Latin spirit. "The people of Chan Kom are a people who have no choice but to go forward with technology, with a declining religious faith and moral conviction, into a dangerous world."

Many anthropologists dream of visiting the scene of an earlier study, but few have done so. Though the Redfields could stay but forty days, this thoughtful study is proof that no time was lost. Redfield is duly cautious about stretching his data. The writing is skillful and sufficiently free of jargon to be attractive to the general reader. The book is significant both as a study in social change and as a sort of mirror in which our own problems, largely similar, may be seen in better perspective.

JOHN BIESANZ

Wayne University

Race and Culture. By ROBERT EZRA PARK. Glencoe, Ill.: The Free Press, 1950. xxii, 403 pp. \$5.00.

This book consists of twenty-nine essays, an autobiographical note which was found among Park's papers after his death, and a preface by Hughes. The editors—Hughes, Johnson, Masuoka, Redfield, and Wirth—have arranged the materials thematically rather than chronologically, using the four rubrics: "Culture and Civilization," "Race Relations," "Racial Attitudes," and "The Marginal Man." The book exhibits a high degree of conceptual unity

even though the articles, lectures, and prefaces to monographs were prepared over a period of more than three decades. The unity stems from Park's preoccupation with the sociological processes generic to the interaction of peoples of divergent races and cultures. Several of the articles are sociological classics and the collection is an impressive documentation of Park's substantive contributions to the study of race relations and culture contact.

The author's writings are not of mere historic interest; though many were on-the-scene, "realistic" reports of particular situations, they contain theoretical analyses which transcend time, place and specific cultures. While perceiving the phenomena of race and culture to lie within the context of larger social structures and world-wide movements, Park concentrated on and his major contributions are within the area of people and processes. Here he displays not only insight but also theoretical virtuosity.

Although Park's orientation was comprehensive, his immediate focus makes peripheral rather than central some aspects which are now deemed crucial in the study of acculturation and race relations. Thus power is recognized as a facet, yet it is not explored with the same degree of sociological perception as is such a construct as the marginal man. In his discussion of culture and civilization, Park states that large-scale, intergroup relationships in civilizations are "political in character." Despite this awareness, the structure and processes of superordination, subordination and stratification are depicted without being analyzed with the same degree of sociological adeptness which characterizes his treatment of people and processes. So, too, while indicating familiarity with the factors precipitating social changes, the discussions include no adequate formulation of the patterning and consequences of nativistic, nationalistic, reform, etc., movements. These comments are not meant to question the validity of Park's theories but to specify where they are of maximum utility and where they require implementation.

One of the salient qualities in Park's method of approach which may still serve as a model for ethnic and minority group studies is the way in which cross-cultural comparisons were explored. Data from many societies were not used merely to illustrate the varieties of human relationships but rather were employed to de-

rive sociological generalizations of an analytical nature. The author's level of abstraction enables him to extract, from a wide and numerous assortment of cases, the processes characteristic of man.

A noteworthy quality of Park's writings is his literary craftsmanship. It makes possible the communication of complex concepts in a precise and simple manner. The articles are notably free of technical neologisms, and the few contrived expressions give potency to, rather than obscure, the ideas under analysis. This verbal artisanship in a science whose primary medium is words enables the author to communicate clearly his meaning and to contribute terminological referents which have proved of strategic value in the study of race relations.

Race and Culture may be used with profit in advanced courses for its theoretical framework and has value in the further construction of theories and in the design of research. Park's analytical scheme has not only yielded significant propositions, it also contains potentialities which await further exploitation.

JOHN USEEM

Michigan State College

Experiments on Mass Communication. (Studies in Social Psychology in World War II, Vol. III). By CARL I. HOVLAND, ARTHUR A. LUMSDAINE, and FRED D. SHEFFIELD. Princeton: Princeton University Press, 1949. x, 345 pp. \$5.00.

The present volume is the third in a series of four Studies in Social Psychology in World War II which are based on re-analysis and appraisal of work done during the war by the Research Branch of the Army's Information and Education Division. The first two volumes, entitled *The American Soldier*, dealt substantively with problems of personal adjustment among soldiers to the institutionalized life of the army and special problems of combat and its aftermath; methodologically with the problem of sample interviewing as a means of eliciting valid and reliable socio-psychological data. The fourth volume, to be published in May, 1950, will deal with selected problems of measurement and prediction in the human realm.

The experiments on mass communication which provide the subject matter for Volume III were carried out by the Experimental Section of the Research Branch. They were mainly, though not exclusively, designed to measure

and explain the differential effects of films as a means of indoctrination and education. But the authors do not restrict their interest to films. Rather, their substantive interest is "in principles which would apply more generally to any mass communication medium." In fact, they express the hope—certainly not without good warrant—that the results of their studies may contribute toward the development of a "body of principles concerning the manner in which ideas and ways of reacting are acquired through learning" (pp. 3-4). The authors' methodological interest, obviously, centers in the adaptation and use of the experimental method in social psychology.

Students in at least three areas of social scientific study will find this unusually thoughtful and constructive document invaluable because of its contributions to an understanding of (1) the relation of learning to the processes of opinion and attitude formation, (2) the factors upon which successful communication depends, and (3) the conditions of relevance and adequacy of experimentation in the study of socio-psychological problems. The program of studies undertaken by the Experimental Section was, of course, designed to serve the practical needs of the Army and was not, therefore, systematically devised from the standpoint of the social psychologist. However, there were many by-products of scientific interest susceptible to systematization. Even when these by-products have to be stated tentatively—because opportunities did not exist to test their generality—they provide suggestive hypotheses for the guidance of further research.

To systematize such by-products one must have some schematic notions of what constitutes systematization and how one goes about the task of accomplishing it. In a very thoughtful introductory chapter the authors indicate what, in their judgment, a systematic treatment of educational film research should ultimately include. It would set forth principles on three levels of generality: first, basic learning principles, such as repetition, motivation, and transference, common to all educational devices; second, mass communication principles, such as participation, interest, and initial attitude, applying to films and similar educational media; third, film principles, such as dramatic presentation, animation, and discussion breaks, related specifically to the medium of films. The principles would be concerned essentially with the factors determining the ef-

fects of films on individuals or groups of individuals. The research incident to the derivation of such principles would fall, the authors maintain, into two main categories, each of which in turn divides into two subtypes. Thus there would be, first, evaluations of a single film; second, evaluations of a class of films; third, experimental investigation of a single variable in the audience-film situation by controlled variation; and, fourth, experimental analysis of two or more such variables in combination. These variables they would classify according to their locus as population or audience variables, film or content variables, and external variables with main emphasis in the last of these on the varied ways in which film may be used in conjunction with other types of communication. The chapter characterizes briefly each of these four types of film research, indicating its value and the conditions of adequacy pertaining to it.

But whether attention is centered on a single film or a class of films, on a single variable or a group of variables, and whatever may be the presumed locus of the variable or variables, the aim would always be to measure and explain the relative effectiveness of the film as an instrument of communication. The principal criteria of effectiveness pertain to three or more different kinds of effects. Thus in the evaluation of the Army films experiments were designed to measure, first, the extent to which films succeeded in imparting information; second, whether they succeeded in "changing opinions in the direction of the interpretations presented"; and, third, whether they succeeded in motivating men to act in the manner intended. A fourth criterion which the Army experience did not provide opportunity to employ is the extent to which these acts do, in fact, ensue. Fifth, the authors recognize that criteria cannot be limited to intended effects; their experiments were set up in such way as to discover also whether there were unintended effects that might or might not be desired by the producers of the communications. The specific criteria for testing intended effects were derived from the stated objectives of the filmmakers or of the program which the film was designed to carry out; the specific criteria for testing unintended effects were derived from content analysis of the film. Finally, effects of any of the foregoing kinds may be ephemeral or persistent, and may increase, decrease, or change in character with the passage of time; hence, the tem-

poral dimension of effects becomes, in a sense, an important independent criterion.

These criteria were applied by the Experimental Section in presentations of the Army's orientation, indoctrination, and educational films under conditions that approximated as closely as possible controlled experimental situations. The purpose was not merely to determine the kind and magnitude of the effects produced, but also and chiefly to find out what variables of any of the three kinds indicated above were associated with qualitative or quantitative differences in effects. The methods used and the results obtained are presented and critically examined in a series of eight chapters (Chapters 2 to 9) and are summarized and evaluated in a final cogent chapter which can be read with understanding and profit even by one who has not worked his way through the more detailed statements contained in the preceding chapters. There are four technical appendices on problems and methods of measurement of effects experimentally produced.

The typical procedure followed in the experiments was the familiar one of selecting two comparable groups, only one of which was shown the film or put through the other experimental routines. Before-and-after examinations of the two groups, by application of questionnaires and scales or by intensive interviewing, provided a basis for determining the effects that were experimentally produced. This basic procedure was supplemented in many of the experiments in such a way as to bring the test variables under better control and to reveal the precise relationship between a known variation and differential effects on the audience. Chiefly what made the use of these procedures productive, however, was the penetrating analysis of the problem in hand before actual experimentation was begun. Such preliminary analysis was frequently accompanied by exploratory research which yielded fruitful hypotheses and suggested empirical ways of testing them.

Any attempt to summarize the findings in a brief review would over-simplify and misrepresent them. To lift them out of the rich critical context in which they are presented in this volume would be to deprive them of most of their instructive and often provocative implications. But certain major substantive areas in which contributions are made may be noted. The detailed results of experiments using orientation and indoctrination films further un-

dermine the notion, still widely accepted even among educators, that attention to and interest in a film or some other presentation is a reliable indication of its effectiveness. Similarly, these findings further undermine another commonly accepted notion that making people better informed leads them to develop sounder opinions and motivates them to act in accordance with these opinions. Again, the findings cast serious doubt (pp. 221-224) on the frequently-made assertion that propaganda merely reinforces opinions already held. Although initial opinions of members of an audience were found to have a bearing on the effectiveness of a particular communication in changing opinions, the relationship is not a simple and direct one. The volume also presents evidence that although large, immediate gains in factual knowledge resulting from any communication diminish in time, opinion changes resulting from communication often actually increase in time and sometimes lose their specific character and become changes in attitudes. In all the foregoing instances suggestive hypotheses explaining the demonstrated effects are developed. It may be pointed out also that the research yields new insights into the bearing on learning of such factors as prior interests and attitudes, intellectual competence however measured, practice, repetition, various modes of interpreting factual material, and the sequence and timing of elements in any presentation.

Especially commendatory are the several ingenious ways in which the research staff of the Experimental Section combined the statistical and the experimental approaches, the fruitful way in which they combined theoretical speculation with controlled observation and manipulation, and the thorough, frank, and modest way in which the research staff has retrospectively examined their own efforts. The book is a notable contribution that should be widely and carefully studied.

CLYDE W. HART

National Opinion Research Center

Surveys, Polls, and Samples: Practical Procedures. By MILDRED PARTEN. New York: Harper & Brothers, 1950. xii, 624 pp. \$5.00.

On the dust jacket of this book appears the statement that it is "A comprehensive basic text for college courses in Social Surveys, Polling Methods, and Public Opinion or Market Research." This claim is well justified and we can probably look forward to an increase

in the number and quality of such course offerings, now that a text is available. Earlier books cover certain segments of the subject matter of Dr. Parten's text, but none of those known to the reviewer could be regarded as a serious competitor in covering systematically the practical procedures of social surveys from start to finish.

Certain weaknesses and limitations in the book are mentioned here, with the aim of advising instructors who may adopt the text for classroom use as to the type of supplementation that should be supplied. First of all, the exhaustive nature of the book, coupled with a hesitancy on the part of the author to evaluate examples as good or bad, means that instructors will need to give students more critical appraisals of the examples cited. For example, a number of the surveys described are mainly of historical interest in the development of survey methods and should not be considered as models to be emulated in the future. In some cases Dr. Parten points this out, but on the whole there is perhaps too little selection and insufficient appraisal for a text for beginners.

Because the book is comprehensive in most respects, the less adequate coverage of rural social surveys and especially of the contributions to the field of surveys and sampling made by workers in land grant colleges and experiment stations will be readily noted by readers with rural interests. A great many of the procedures described are equally applicable to rural and urban surveys, but the special problems posed by the rural situation are given scant attention.

The weakest parts of the book are the chapters dealing with sampling and statistical measures of reliability. In interpretation of the standard error, for example, a correct statement on the standard error of an estimated percentage is followed by an absolutely incorrect statement involving inverse probability. (p. 501) Similarly, the interpretation of the standard error of the mean is given in terms of inverse probability. (pp. 502-3) To some this may appear to be quibbling over a minor technicality, but this reviewer does not see why beginners in applied statistics cannot be taught correct rather than incorrect interpretations of measures of reliability.

Some of the "principles" set forth for sampling are given as though they are invariably to be followed when this is not always the case. Examples are: "The same unit should

be used in sampling and in tabulation and analysis." (p. 222) (not true in most population and labor force surveys); "The method of selecting the sample should be completely independent of the characteristics to be examined" (p. 223) (not true in most stratified samples).

Selected references appear at the end of each chapter, but usually a given reference is to an entire book rather than to the pertinent pages or chapters, which would have been helpful for students. The book ends with a bibliography that is remarkable for its coverage—it contains 1,145 titles without annotations.

MARGARET JARMAN HAGOOD

U. S. Department of Agriculture

La Géométrie spontanée de l'enfant. By J. PIAGET, P. INHELDER, and A. SZEMINSKA (with the aid of 16 collaborators). Paris: Presses Universitaires de France, 1948. 514 pp. 800 fr.

Since 1941 Piaget and his collaborators have published a series of (untranslated) monographs dealing with children's concepts of arithmetic, volume, weight, time, movement, speed, and the like. For the most part American social psychologists do not seem aware of these volumes, though Piaget's later work, even more than his earlier, has direct and critical bearing upon the problem of socialization. In *La Géométrie spontanée*, Piaget, Inhelder, and Szeminska have continued to utilize with great profit the egocentrism-relativism scheme to clarify children's notions of euclidian space.

As usual Piaget has devised numerous ingenious tests so as to elicit both motor and verbal responses from his young subjects. The responses on single or closely related tests are then classified according to degree of sophistication, the classifications being termed "stages." Each chapter follows a pattern consisting of a description of the test or tests used, a brief summary of the stages found, and a detailed discussion and documentation of each of these stages. There are fourteen chapters and a conclusion, and a partial recitation of their titles will suggest some of the scope and depth of the related studies: "Spontaneous Measure," "Construction of Relations of Distance," "Conservation of Length When Deformation of Lines is Compared," "Determination of a Point on a Plane or in Space," "Measurement of Triangles," "Sum of the Angles of a Triangle," "Partition of Surfaces and the Notion of Fraction." In

their concluding and summary chapter the authors attempt to tie together the results of this diverse array of studies of spatial concepts. The weakness of the volume, aside from its lack of an index, is that the data are entirely qualitative. This is balanced by the great richness and detail of the protocols, by the impact of cumulative and mutually re-enforcing data, and by the fact that Piaget and his collaborators never do any research without a directing—and first rate—theory. It is this reviewer's belief that social psychologists can find in Piaget's investigations of the child's notions of physical environment a model for similar investigations of the child's developing notions of a social world—including the study of concepts like class, money, property, God, and Negro.

ANSELM L. STRAUSS

Indiana University

Social Work in a Revolutionary Age and other Papers. By KENNETH L. M. PRAY. Philadelphia: University of Pennsylvania School of Social Work (University of Pennsylvania Press, distributor) 1949. x, 308 pp. \$4.00; *Social Group Work Practice: The Creative Use of the Social Process.* By GERTRUDE WILSON and GLADYS RYLAND. Boston: Houghton-Mifflin Company, 1949. x, 687 pp. \$5.00.

These books both deal with aspects of social work but from entirely different approaches: *Social Group Work Practice* from that of the group worker looking for guidance in the theoretical assumptions and the techniques of his task, *Social Work in a Revolutionary Age* from the broader angle of all social workers seeking evaluation of their profession, the trends in its development, and its relation to national and world events. One resemblance between the two will interest the sociologist, namely, the emphasis on the individual personality and its relation to the group dominant in the molding of individual incentives and forms of expression. The ideal of both books well might be expressed in the words of Pray: "For the central, continuing problem of social organization and adjustment remains always the same—to find a secure, stable basis for creative, satisfying life in the midst of constant growth and change."

Wilson and Ryland are professional teachers of prospective workers in one field of social work; Pray was not a trained social worker but an administrator of a school of social work,

a keen observer and interpreter of the whole profession.

Pray is likely to make a more immediate appeal to the social scientist because of the sweep of his thinking and the clarity and objectivity with which he analyzes some of the controversial issues among social workers and the conflicting schools of thought and practice in the field. His book is, however, extensive in the matter of the subjects covered rather than comprehensive or adequate in the treatment of any one of them. It consists of twenty selected speeches and articles chosen for the most part from those written within the last decade. Beginning with three papers on the earlier formulations of the philosophy underlying social work practice, in which Pray emphasizes the part of the profession in the "thoughtful planning and operation of the normal common life of all men" and the responsibility of the professional worker to act as an individual "beyond the level of agreement of all his colleagues," the editors have included four papers on public welfare and six on penology, the two areas to which Pray contributed steadily both in the theoretical aspects and in developing practices. The book concludes with five papers on generic principles as seen by the author in his later years.

Pray was not a profound thinker but his speeches and writings as here represented give a clear statement in good English of the goals, the responsibilities, and the basic assumptions of social work.

Wilson and Ryland have written the most comprehensive and authoritative text yet to appear on interpersonal relationships within a single group and the functioning of the group as a whole. It will prove useful primarily to the instructors of courses in "pre-social work" or courses in group structure and process in all institutions and communities. The four parts of the book cover the social group work method, analysis of program media, records of social group work practice, and supervisory and administrative processes respectively. Fifty-three pages are devoted to a fairly complete bibliography covering each part and section of the text.

In the analysis of program media the practicing or prospective group worker will find not the most extensive listing of resource material but by far the best analysis available (in this reviewer's opinion) of the values to the individual and to the group, of play, games,

dance, story telling, dramatics, arts and crafts, the out-of-doors, and trips. Throughout the entire book is stressed an insistence on an understanding of the psycho-dynamics of group life and illustrations and interpretations that reveal without overemphasizing the emotional factors and the worker's method of dealing with them. There are other texts containing good records of group performances but here are fifteen excellent records of pre-school and school age children, adolescents, young adults, adults, and the aged, each comprising excerpts from actual records, analyses by the authors, and questions for the students.

The sociologist will find live, interesting, and authoritative illustrations of the workings of primary groups in the section on records of group work practice.

LEROY BOWMAN

Brooklyn College

Heredity East and West: Lysenko and World Science. By JULIAN HUXLEY. New York: Henry Schuman, Inc., 1949. x, 246 pp. \$3.00.

Anyone who tries to understand the human scene today must be amazed, amused or exasperated—or perhaps all these together—at the extravagant Russian claims of priority in scientific discovery and invention. The Russians, however, lay no claim to the original discovery of genes in the chromosomes or the laws by which the genes pass from one generation to the next. This, at first glance, may seem to be an exception to their claims of priority, but such is not the case. Mendelism in Russia is capitalistic, non-Marxian, it has no utility and so is false; and besides, the Russians say they have discovered and developed a superior brand of genetics, that of Michurin and his followers, notably Lysenko. Michurin genetics, which the Russians claim is new in principle, holds that heredity is an extension into the next generation of the metabolism of the parents. Modify the metabolism of the organism, and there follows an assimilation of the change which is transmitted to the next generation and so there is an inheritance of acquired characteristics. It is well known that although many experiments since the 1880's have been performed to test this view, yet the results show that the conclusion is untenable.

If this controversy between Soviet Genetics and neo-Mendelian Genetics had remained on the scientific level, it would have made no more stir in the world than the recrudescence

of a discredited theory usually does. The character of the controversy from the Soviet side does not include any valid disposal of the truly vast body of supporting observations and data for the principles of neo-Mendelian Genetics but was confined to general accusations that Morgan and other Mendelian geneticists hold the most contradictory views. Lysenko and some of his followers say that modern geneticists believe that biological laws are unknowable, that modern geneticists believe at the same time that biological phenomena are subject to no laws whatever because they are based on chance, and also that natural laws are eternal and unalterable. And, as might be suspected, the charges against geneticists and other scientists descended to the level of personal abuse against those for whom they felt a special grudge.

The controversy, far from being kept on the scientific level of discussion, was made a matter of politics in Russia; and no distinction is made between scientific truth and the arbitrary pronouncements of those who wield the highest authority. There is a return to the view that truth is a body of official doctrine, with the corollary that if scientists do not find conclusions in agreement with the official truth they are guilty of sabotage and must be liquidated.

In this book Julian Huxley, a world renowned scientist, and first Director-General of UNESCO, who has made notable contributions to genetics and other fields, gives an account of the history of the controversy. He discusses the controversy from the scientific angle and includes a short but certainly among the very best accounts for the general reader of the science of genetics itself. He then discusses the ideological issues involved and brings out the larger meaning of this attempt to bolster up the nationalistic spirit of the Russian people by insisting on the superiority and priority of Soviet science.

The whole book makes exceptionally interesting reading. It is, in the opinion of the reviewer, the best book for the general reader that has appeared on this unlooked for descent into irrationality by a large sector of the modern world. It is well documented, the results are skillfully presented and, above all, it is exceptionally clear and readable throughout. Huxley shows that in Russia "the basic scientific principal of appeal to fact has been overridden by ideological considerations," and attempts to answer the question "why?"

Finally it should be noted that the book itself is eloquent testimony to the eminent fairness of the mind of Mr. Huxley.

A. H. HERSH

Western Reserve University

On Being Human. By ASHLEY MONTAGU. New York: Henry Schuman, 1950. 122 pp. \$1.95.

The dust cover says that this work is "the carrier of an epoch-making idea . . . out of which may well evolve a basic revolution in the outlook of man upon man." It is said to bring together "for the first time" evidence "that co-operation, not conflict, is the natural law of life." "What has been text material for countless Sunday morning sermons . . . is now revealed as having a valid, scientific base." One's estimate of such a work depends largely on whether he weighs it as a preachment or as a contribution to knowledge.

The author seeks to replace natural selection by co-operation as the dominant principle of biological evolution, competition by mutual aid as the basis of economic life, and the idea of original sin by the doctrine that man is born "good" as the basis for ethical teaching. Some eighteenth century utopians believed man born good but corrupted by state and church; Montagu believes him corrupted by the competitive spirit of the free enterprise system. Fiske developed the social and ethical significance of prolonged infancy; Montagu stresses the need of infant and child for love if he is to become "a happy, joyous, secure person," such as is developed by the co-operative culture of the Eskimos and the Australian aborigines. Kropotkin showed far more effectively than our author the role of mutual aid in evolution; and Henry Drummond in his *Natural Law in the Spiritual World* and his *Ascent of Man* preached the same sermon. Egocentricity, social evil and sin become synonymous; competition leads to frustration

and hence to aggression. We must have a new type of educator that will train up a new generation in the true basis of human relations, namely, that love is security.

As a preachment no one can doubt this is timely. The world needs far more of the spirit of mutuality, lest it destroy itself. However, no sociologist would accept this view as a complete description of either biological evolution or social relations. Is there, then, no struggle for existence? Can one not view life as competitive on both the individual and group levels? If co-operation has actually been dominant why all the wars, persecutions, rivalries? Must we return to preliterate forms of social life for the sake of personality security? Does ego-striving have no significance for the evolution of higher cultures? The author praises the primitive solidarity because "as long as there is anything to eat, every member of the group will eat," but he does not add that when there is not enough for all, some will eat others. Perhaps the competitive spirit has something to do with our relative abundance. Is it not surprising that the nation that excels in free enterprise is now the world's giver of charities and the main hope for building a more co-operative and united world, while the nation that has gone in for complete co-operation is the world's greatest security threat? What does co-operation mean any way? And where are those new teachers to come from? And will they accomplish more than twenty centuries of preaching? If not, why not? Perhaps it is a law of civilization that the advancement of culture involves a more complete development of the personality, that this involves ego expansion and hence greater rivalry, not merely for life's necessities but for all the marks of status, whether these be worldly goods or leadership in the party.

FRANK H. HANKINS

Northampton, Mass.

BOOK NOTES

Sociology. By W. J. H. SPROTT. London: Hutchinson's University Library (Longmans, Green & Co., distributor) 1949. 192 pp. \$1.60.

This is Number 34 in a series (now stocked by the American office of Longmans, Green) whose general purpose is "to provide popular yet scholarly introductions" to a wide range of subjects, especially for the "unprofessional student." With these limitations, and an inherent British slant, the book must be regarded as an admirably brief and lucid exposition, although the author, a philosopher at the University of Nottingham, will probably not be known among American sociologists. He presents the central concepts of European sociology not only fairly but in an engaging manner, drawing principally from the works of Durkheim, Weber, MacIver, Hobhouse, Ginsberg, and Malinowski. Preliminary chapters on the purpose and methods of sociology are followed by treatment of such topics as power, social control, stratification, and social change. The general approach is institutional, in the MacIver-G. D. H. Cole meaning of the term; and ethnographical, historical, and contemporary data provide illustrations. Although it is unlikely that the book will have widespread appeal as a text, it can be recommended to professional sociologists in this country as an example of how much that is intelligent and straightforward about their subject can be said in little space.—E. H. VOLKART

Social Anthropology: The Science of Human Society and Culture. By J. S. SLOTKIN. New York: The Macmillan Company, 1950. xviii, 604 pp. \$4.75.

Although designed to provide a systematic introduction to social anthropology, it is unlikely that this book will seriously challenge—or should even be compared with—such superior post-war texts as those of Gillin, Herskovits, and Hoebel. The vehicle for Professor Slotkin's presentation consists in a series of staccato propositions, concepts, and generalizations concerning the nature and effects of human society and culture, to each of which is appended groups of "illustrations" culled from a staggering array of published sources on pre-literate, historical, and contemporary peoples. One can only be impressed by the range and catholicity of the author's reading; and many will applaud his effort to raze the

walls of theoretical provincialism which still divide the social sciences. But the marriage between didactic statement of concepts and interpretative "readings" is one of convenience at best; and the net impression remains that this is little more than a logically arranged and reasonably comprehensive scrap-book of cultural materials. The quoted materials, which comprise perhaps three-quarters of the book, are always located by tribe or geography—e.g. [Ainu], [Rome], [Ashanti], [United States]; they vary in length from a line or two to a page or more; they are scrupulously identified as to source; and they are set in smaller type. Granting the prevailing lack of consideration for the reader in contemporary textbook design, one might reasonably expect from this publisher better composition than these cluttered pages which not only offend but also strain the eyes.—S. W. REED

Selected Writings of Edward Sapir: In Language, Culture, and Personality. Edited by DAVID G. MANDELBAUM. Berkeley and Los Angeles: University of California Press, 1949. xvi, 617 pp. \$6.50.

Although Sapir's principal fame rests on his contributions to the science of linguistics, it would be difficult to overstate the extent of his influence on students of other aspects of human behavior. His unique flair for "frontier problems," applied generously to the fields of ethnological theory, social psychology and psychiatry, and social philosophy, was especially noteworthy in that area of research known today under the name of Culture and Personality. To the latter he gave a particularly decisive initial stimulus.

The versatility of Sapir's interests accounts for the fact that many of his most interesting utterances appeared in journals, scientific series, symposia, and the like which are not readily accessible. To make available in one volume these scattered essays, some of them minor classics, is a major service to the social sciences and an exciting gift to the numerous admirers of Sapir's mind. Roughly half of the papers in this volume are devoted to language, the other half to culture and personality. A complete bibliography of Edward Sapir is provided, and the editor, a former student of Sapir, has contributed a helpful introduction.

—J. BRAM

First Lectures in Political Sociology. By ROBERTO MICHELS (Translated and edited by Alfred de Grazia). Minneapolis: University of Minnesota Press, 1949. 173 pp. \$2.75.

During the past decade the spotty literature of political sociology available in English has been greatly enriched by the translation of some of the European classics. The American student of political behavior can now take advantage of the growing body of empirical data of comparative politics and the great works of suggestive theoretical speculation available in the writings of Max Weber, Gaetano Mosca, and Vilfredo Pareto. This collection of lectures and essays by the Italian political sociologist, Roberto Michels, is a useful addition to this literature, although it can hardly be said to stand on the same level of scope and originality with the other theorists' contributions. Michels was essentially an eclectic theorist and tester of hypotheses developed by others. While influenced by Max Weber, his views on political leadership and democracy were more dependent upon those of Mosca and Pareto. The writer who comes closest to continuing this tradition in the present is that great celebrator of the so-called "Machiavellians," James Burnham.

—G. A. ALMOND

Drawing-Room Conversion. A Sociological Account of the Oxford Group Movement. by ALLAN W. EISTER. Durham, N. C.: Duke University Press, 1950. xv, 236 pp. \$3.50.

Eister has presented here a brief, readable account of the Oxford Movement, with sufficient data to indicate diligent field and library research. But his sociological analysis is in terms of constructed social types, in this instance the Oxford Group being likened to a cult, in contrast to a sect. Typologies of this sort are an awkward, contrived tool for analysis, because their ideal traits are hard to identify reliably, and their use leads to excessive preoccupation with similarities and contrasts between model and subject, which can result in the obscuring, as frequently as the clarification, of reality. This case study, and others of its kind, would have been immeasurably strengthened had its author cast free from that typology first provided students of religion by Weber and Troeltsch, and presented his findings in some other theoretical form. As it is, Eister's theoretical device has prevented him from both asking and answering many important questions

concerning the sociological implications of his study.—J. SIRJAMAKI

Current Social Problems. By CLEMENT S. MIHANOVICH and JOSEPH B. SCHUYLER. Milwaukee, Wisc.: The Bruce Publishing Company, 1950. xiii, 452 pp. \$3.50.

The simplicity of this introductory text for students in Roman Catholic colleges is intentional. The authors say that they have tried "to maintain a simple and popular approach" and "to leave unanswered a few questions" in order to stimulate independent thought. Yet the book does not seem to be particularly challenging. Though interspersed with cartoons and illustrations, the chapters follow an unimaginative pattern of "definition, extent, causes, effects, and solution." The opening chapter on "Christian Sociology" reduces the rest of the book, in effect, to a work of supererogation since it states that adherence to Christian social principles would provide the ultimate solution to social problems. As a text, it would benefit by clearer statement of why the topics chosen constitute "social problems," more thorough interpretation of factual evidence of problem causation, and better understanding of contemporary psychology. Particularly striking is the compartmentalization of Catholic social philosophy in the supposedly keynoting first chapter; the fourteen other chapters, on as many problems, read more like social science.—S. W. REED

Production of New Housing. A Research Monograph on Efficiency in Production. By LEO GREBLER. New York: Social Science Research Council, 1950. ix, 186 pp. \$1.75.

This is a highly competent and compact survey of technological and economic factors which affect the production of new housing, together with suggestions for research into construction problems in which present knowledge is limited or lacking. In lucid, condensed manner Grebler has examined the institutional structure of the housing industry, and assessed its operations in terms of efficiency in housing production. His orientation, while thus inclusive, is however that of an economist, and his proposals for research mainly of a fact-finding kind, "descriptive-analysis type" in his own words. There is little if any material related to sociological theory, and most sociologists will, when they examine this volume, be concerned mainly to understand its factual information.—J. SIRJAMAKI

The Adjustment of the Blind. By HECTOR CHEVIGNY and SYDELL BRAVERMAN. New Haven: Yale University Press, 1950. 320 pp. \$4.00.

This volume deals with problems of the mental, emotional, and physical adjustment of individuals to the loss of sight and to the reception accorded them by society. Written in collaboration with a clinical psychologist by a professional writer, himself blind, it attempts not only to demolish old fables about the emotional life of the blind, but seeks to add to positive knowledge concerning the manner of their physical and mental adaptations. Major topics covered are the care and treatment of the blind through history, the psychological roots of society's attitudes toward the blind, and the reactions of the blind to those attitudes. The work suffers somewhat in continuity from the way in which material relevant to these topics is scattered throughout the volume. Nevertheless, and in spite of its psychological orientation, the sociologist should find such material of interest from the standpoint of illustrating, once again, that in matters of individual adjustment the social interpretation of a biological condition is often of more importance than the condition itself.—J. S. DAVIE

Alcohol and Social Responsibility: A New Educational Approach. By RAYMOND G. MCCARTHY and EDGAR M. DOUGLASS. New York: Thomas Y. Crowell Company, 1949. xvi, 304 pp. \$3.50.

This volume aims to meet the growing demand for objective treatment of problems of alcohol and alcoholism in their socio-cultural contexts. Against a historical and comparative background of their ancient origin, and the concrete and symbolic use of alcoholic beverages, are arrayed a series of chapters dealing with the history of attempts at social control in this country through the organized temperance movement, with quantitative data on alcoholic beverage consumption, with patterned drinking activities and group attitudes, and with important facts about the physiological and psychological effects of alcohol on the individual. Attention is also paid to contemporary systems of control and to the important ques-

tion of remedial treatment for alcoholics. In the second part of the book, addressed particularly to teachers and students of education, stress is placed on ways and means of providing greater public understanding of the problem and of developing public responsibility as pre-requisites for effective alleviation and prevention.

For the sociologist anxious to learn more about the interrelationships between problems of alcohol and alcoholism and such subjects as social maladjustment, criminology, family structure and functions, and social control, this volume should provide one of the best single sources of objective information.—R. STRAUS

The Sociology of the Patient: A Textbook for Nurses. By KARL LOMAN KOOS. New York: McGraw-Hill Book Company, Inc., 1950. xvi, 264 pp. \$3.00.

This volume has been specifically designed to supply nurses in training with an understanding of the patient as a member of society and of the particular social and personal problems which he faces in adjusting to his environment. The importance of this aspect of the nurse's education has followed in the path of a growing realization of the close interaction between social and psychological factors and illness.

The book deals first with the physical and cultural environment and with the processes by which the individual acquires social roles and a unique personality. Next, consideration is given to such factors as social class and race and to various aspects of group interaction. Here the effort is to show how the group not only provides a setting for individual behavior but at the same time helps to mold the individual. Finally, the book deals with some everyday problems in social living, such as those involved in employment situations, in finding security, in maintaining good physical and mental health, and in obtaining adequate care in the case of illness.

Because it has been necessary to present something relatively brief which can be adapted to an already crowded curriculum, the book skims lightly over many complex factors. However, the materials used have been appropriately selected and are well presented.—R. STRAUS

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(Listing of a publication below does not preclude its subsequent review)

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